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Canada, Mines and Technical Surveys, Dept. of
Geographical Branch

DEPARTMENT OF MINES AND TECHNICAL SURVEYS

GEOGRAPHICAL BRANCH

Programme of Research on Canadian Geography

GEOGRAPHY IN CANADIAN UNIVERSITIES

being part of a general report in
course of preparation on geography
in Canada.

by

M.R. Dobson

111

(Miscellaneous Papers No. 2.)

OTTAWA
1950



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A. GEOGRAPHY IN SEVEN CANADIAN UNIVERSITIES

1. INTRODUCTION: HISTORICAL DEVELOPMENT

Although a widespread interest in the study of geography in Canada has been quite a recent development, geography has long been taught and applied in Canada.

Geography, as a separate subject, was in the curriculum of the University of New Brunswick at its foundation at the beginning of the nineteenth century. Although it was later dropped and geography, as such, was not taught elsewhere, geographical schools of historians and economists presented the geographical factor in lectures and writings.

Meanwhile, in 1906 the University of Toronto inaugurated a course in Economic Geography, while in 1910 a lectureship in geography was established at the School of Higher Commercial Studies at the University of Montreal.

In the University of Toronto the Department of Political Economy continued to advance the teaching of Economic Geography and eventually appointed Dr. H.A. Innis as Associate Professor of Economic Geography. His work was the basis for the founding of a Department of Geography.

Other universities took an interest in the subject. In 1915, the University of British Columbia offered a course in Physical Geography in the Department of Geology and Mineralogy. In 1922 the name of this Department was changed to that of Geology and Geography.

During the twenties and early thirties courses in commercial geography in Departments of Economics or of physical geography in Departments of Geology were offered at Dalhousie, Acadia, New Brunswick, Montreal, McGill, Queens, Toronto, McMaster, Western Ontario, Manitoba, Brandon College and British Columbia.

The first fully fledged Department of Geography, established to offer an Honours Degree in Geography, was founded at Toronto in 1935, by President Cody, who invited the world-renowned geographer, Professor Griffith Taylor, to occupy the Chair of Geography. Lectureships in geography were set up in other Canadian universities, during the thirties, particularly at Western Ontario (1938), McMaster (1939) and Montreal (1939-40).

Soon fully developed departments of Geography emerged. In 1942 one was established at McMaster University; in 1945 at McGill; in 1947 at Montreal; and in 1949 at Western Ontario.

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The present situation in the Universities is as follows¹:

<u>Independent Departments</u>	<u>Joint Departments</u>	<u>Lectureships/Professorships</u> (Not associated with Depts.)
Toronto 1935	U.B.C. 1922	School of Higher Commercial Studies
McMaster 1942	W. Ontario 1936-48	U. of Montreal, 1910 Manitoba, 1948
McGill 1945	Laval 1946	Memorial College, 1940
Montréal 1947		Ottawa University, 1949
W. Ontario 1949		Carleton College, 1950 McMaster U., 1939-42

One important aspect of the work being done in the Universities is that of training teachers to teach geography in the elementary and secondary schools of Canada. Geography is generally taught as a part of a social studies programme which includes history. Since many teachers of Social Studies have taken little or no geography at Universities they are generally recruited from Universities with courses of history which include some geography. However, there is a growing tendency to demand a more specialised training in geography. This training has the benefit of leading to positions for graduates as professional geographers in government service.

2. INDIVIDUAL DEPARTMENTS OF GEOGRAPHY

(i) McGill University

The Department of Geography at McGill was established early in 1945. George H.T. Kimble was appointed to the Chair of Geography and the Department formed a part of the Social Sciences group of the Faculty of Arts and Science. Classes began in the fall of the same year. By 1946 the Department offered 10 undergraduate and 6 graduate courses, with the total registration of students being at least 500.²

In 1950-51, the number of courses had been increased to 2 half courses and 12 full courses, with 3 graduate courses given in the Faculty of Graduate Studies and Research.

In 1947, a Geography Summer School was inaugurated, originally to provide training for Quebec school teachers, but eventually to develop international seminars in geography for graduate students. The school is held at Stanstead, in the Eastern townships during six weeks of the vacation period.

¹From a report presented to the Canadian Social Science Research Council, October 28, 1950 by Dr. J.W. Watson.

²Kimble, G.H.T. "Geography in Canadian Universities", Geographical Journal, Vol. CVIII. July 1946.

Entrance to Geography Course

Students enter the Honour Course in Geography from the First Year of the B.A. or B.Sc. course, where Geography 12 - Elements of Physical Geography, is an optional subject.

Degrees

The course of study is placed among the Social Sciences. A candidate for a B.A. may acquire either a General or Honour Degree in the course of his choice. Geography as a continuation and elective subject is among the subjects of study offered for the General Arts and Science degree. An Honour course in Geography is offered in the second, third and fourth years.

Thesis

The calendar indicates that no field problem is required as a basis for thesis work. However, candidates for the Ph.D. degree do make supervised field work the basis of their theses.

M.A. and M.Sc. Degrees

A candidate for an M.A. degree must have 4 full courses (or their equivalent, and must have taken either Geology 1 or 2.

Ph.D. Degree

Students who have attained high standing in the M.A. or M.Sc. graduate work in Geography at McGill or have equivalent qualifications may proceed to the Ph.D. degree. Only in exceptional circumstances will a student be allowed to register for the Ph.D. without having first taken a Master's degree. All Ph.D. students will be required to undertake at least one extended program of supervised field work.

Geography Training

In 1949-50, the year for which figures are available by which to compare various courses across Canada, two half courses and 11 full courses were offered at McGill. In 1949-50 on the basis of hours of instruction including laboratories, lectures and seminars, all Geography courses to B.A. level added to 810 hours (24 week session). Of these hours, some 96 were given to laboratory instruction. The calendar designated 2 of 3 graduate courses. These graduate courses required approximately 48 hours of instruction. The total number of hours of instruction to M.A. or M.Sc. level came to 858. In 1950-51 there were two half courses and 12 full courses to B.A. or B.Sc. level. Hours of instruction now amount to 834. Another 48 hours of instruction are given to M.A. M.Sc. level. Total hours to M.A./M.Sc. level - 882.

Field Camps

The Calendar does not indicate any provision for field camps or field excursions as part of the Honour Geography Course. Supervised field work is cited for Ph.D. candidates only.

(ii) McMaster University

Although a course in commercial geography was being taught in the Political Economy Department as far back as 1920, it was not until 1939 that a full lectureship in geography was established. Dr. J.W. Watson, of Edinburgh and Sheffield Universities was appointed in 1939 to a lectureship in Geography and Sociology. Geography swiftly gained support at McMaster, with registrations increasing many times in a few years. In 1942 a Department of Geography was set up to offer a pass degree in collaboration with the Department of Geology. In 1945 an Honours Course was approved. Mr. John Elson, specialist in Climatology and Conservation and Lady Agnew of Edinburgh and Montpellier Universities, whose research interests were primarily in human and historical geography, were additions to the Geography staff. They were succeeded, in 1946 by Professor Lloyd Reeds and Mr. R. Ruggles, graduates from Toronto.¹ In 1950-51, 9 half courses and 7 full courses were offered in the department. In addition 6 graduate courses in geography were listed in the Faculty of Graduate Studies.

Entrance to Geography Course

Admission to the Honour Geography Course required completion of the first year in Social Studies **with** at least a second class average in Geography 103, 133 and Geology 103 or completion of the first year under Physical Sciences with at least a second class average in Geology 116 and Chemistry 117. Note: (For purposes of administration in this University certain classes in Geography are equated as science and others as non-science electives).

Degrees

The Honour Course in Geography, required 4 years from Grade XIII to a Bachelor of Arts degree. A three year pass course, leading to a pass B.A. degree, is available in Geography and Geology. The basis of the thesis must be a field problem.

Thesis

The basis of all B.A. and M.A. theses at McMaster, is a field problem.

M.A. Degree

Candidates for the M.A. degree in Honour Geography are required to have an Honour B.A. including 16 courses in Geography. Three of six graduate courses are required for the degree, with each course involving 3 hours of lectures per week. The basis of the thesis must be a field problem and an oral examination is held on it.

Geography Training

In 1949-50, eleven half courses and 5 full courses were offered at McMaster. On the basis of hours of instruction, including laboratories, lectures and seminars, (23 week session), all geography courses to B.A.

¹ Watson, J.W. "Geography at McMaster", McMaster Alumni News, Vol. 18.

level, added to 866 hours. Of these hours 273 are laboratory hours of instruction. The total hours of geography instruction to MA. level were 1073. According to 1950-51 calendar 7 full courses and 9 half courses are listed. Total hours of instruction to B.A. level equals 751, of which 285 hours are for laboratory instruction. Approximately 207 hours of instruction are given in 3 of 6 graduate courses in geography making the total hours of instruction to M.A. level equal 958.

Field Camps

A field camp of one week is held in September for 3rd and 4th year Honour Geography students; each student presents a written report on his field observation. Credit in the fourth year will be given for this course to those students who have been engaged in approved field work during the summer.

(iii) University of Montreal

Geography began in 1910 when an independent professorship, not associated with a department of geography, was set up in the School of Higher Commercial Studies.

During the next two decades, commercial and economic geography continued to be taught in the Faculty of Economic Sciences. In the three or four years preceding 1945, plant and animal geography were carried on under the direction of Dr. Pierre Dansereau. In 1945 courses in human and economic geography were instituted in the Faculty of Letters and finally in 1947 an Institute of Geography was established in that Faculty. Dr. Brouillette of the School of Higher Commercial Studies, and Dr. Dagenais, the head of the Institute of Geography are the principal members of the geography staff. In the summer of 1945 and 1946 Dr. Raoul Blanchard of Grenoble, as visiting professor, lectured on the regional geography of Quebec and continued his research on L'Est du Canada Francais.

Members of this department have made three consecutive summer explorations into little known parts of Ungava, chief of whom was Dr. Dagenais; Dr. Brouillette has done valuable work on the lower St. Lawrence and in Gaspé, while Dr. Dansereau carried on a year's field work in Brazil. By 1950-51, 6 full courses and 11 half courses were included in the curriculum.

Degrees

Before 1949-50 degree work in geography was carried on only at graduate level, i.e. M.A. LesL. Ph.D. and DesL. In 1950-51, an undergraduate course for students wishing to acquire a B.A. degree in geography was set up.

Thesis

Though not indicated in the calendar a field problem is the basis of the theses for the M.A. LesL, Ph.D. and DesL degrees. The B.A. candidate presents a field 'memoir'.

Geography Training

The number of Geography courses listed prior to 1950-51 as being available in the Department of Geography, were 3 half courses and 15 full courses. However, the number of hours per course was small. The minimum number of hours of geography instruction including laboratories, lectures and seminars were 420 hours. Of these hours 195, were devoted to laboratory and practical work and field excursions. In addition, 4 courses designated in the Calendar as graduate courses, made up another 60 hours. The total number of hours then to M.A. and LesL level was 480. Following the institution of an Honour Geography course, for undergraduates in 1950-51, the number of half and full geography courses increased to 17. Hours of instruction to B.A. level come to 694 with approximately 120 hours being spent on laboratory instruction¹. In addition there are 9 full courses involving another 311 hours of instruction to M.A. and LesL level, with 30 hours being spent on laboratory work. Total hours of instruction to M.A. level amount to 1005.

Field Camps

In lieu of a field camp, Montreal University has organized an Ecole Mobile de Geographie. It is not laid down in the calendar that candidates in undergraduate or in post graduate work in geography have to attend and it is assumed that it is not compulsory for regular course students. The program in 1949 during the six week tour, included 100 lecture hours and 70 hours of supervised practical work.

(iv) University of Toronto

Economic Geography was first taught at the University of Toronto in 1906. Thus there was a longer history of geography instruction at this University than at any other Canadian institution. Later a chair in Economic Geography was established under Prof. H.A. Innis. As the interest in geography increased it was felt that a separate department should be established. This was done in 1935 when Professor G. Taylor was appointed head of the first fully fledged Geography Department in Canada. The instituting of a Department of Geography at Toronto was not the outcome of a Geographical Division in some other Department. It was decided by a Committee on Geography. It commenced with pass courses. The first year lectures - "The Ecology of World Resources" beginning in September 1935, were given with a strong economic slant. A course of "Geographic Factors in European Civilization" has been given each year to prospective teachers at the Ontario College of Education.

In 1936 laboratory work was commenced. Dr. G. Taylor, head of the Geography Department, believed that geography must be founded on a strong basis of geology and physics, and that the use of instruments and the production of numerous maps and diagrams was essential. Experience in field work was given to pass students, by basing laboratory work largely on local environment. In the Honour courses, which started in September 1940, provision was made for students to spend a week or so in the field under expert direction.

¹ Students in the undergraduate courses do not necessarily take all the Geography courses, as listed in the Calendar.

Special classes were provided for teachers. By August 1940 about 150 teachers had attended at least one year, while about 50 had passed in all three years of Pass Geography. For rural teachers, summer schools carried out the same programme. This was an important step forward in helping to improve the standard of geography as taught in elementary and secondary schools¹.

Degrees

The Honour Geography course is grouped with the Science division of the Faculty of Arts at the University of Toronto.

Theses

A thesis is required from each candidate, for the Honour B.A., the M.A. and Ph.D. The basis of all these is usually a field problem.

Entrance to Honour Geography

Students qualify for the Honour Course in Geography by completing the first year for Honour Science. This course acquaints students with the elements of Chemistry, Physics and Biology, and Geology. An alternative form of entry, is through the Pass Course, provided that the student obtains a high standard in Pass Geography. In which case, he may transfer to the second year of the Honour Geography course.

M.A. Degree

Candidates for an M.A. degree may choose their major field from Physical, Human or Regional geography. Prerequisite to the M.A. work is an Honour B.A. or its equivalent namely, 24 full courses in geography. The student chooses 2 of the 6 graduate courses offered.

Geographical Training

In the 1949-50 academic year a candidate for an Honour B.A. in geography, had covered in the Second, Third and Fourth Year of the course, 4 half courses and 14 full courses. The number of hours of geography instruction during this period, including laboratories, lectures and seminars came to approximately 1167 hours. About 138 hours out of the 1167 were spent on laboratory instruction. The number of hours of laboratory instruction to M.A. level was about 161. The total number of hours to an M.A. degree, spent in geography instruction alone was approximately 1328.

In 1950-51, the hours per week were raised from 12 to 14 hours in the second and third year and to 18 in the fourth year. The number of courses in the 1950-51 academic year, were 4 half courses and 18 full courses to B.A. level, but the total hours of instruction to B.A. level increased to 1548 of which 216 were for laboratory instruction. No instruction hours are indicated in the 1950-51 calendar for the graduate courses².

¹ Taylor, G.T. "Geography at the University of Toronto". Canadian Geographical Journal, Vol. 22-3. Sept. 1941.

² Hours of instruction in graduate geography courses are assumed to be the same as in 1949-50.

Field Camps

Honour Geography students spend in one or both of their 3rd and 4th years one week at a field camp. Here under the supervision of the staff, students are versed in the art of field techniques and field methods. Each student submits a regional field report from his own observations in the field. Geography students from McMaster, now join (1949) the Toronto group at the camp. (See McMaster University).

(v) University of Western Ontario

A Geographical Division in two Departments viz. Economics and Geology resulted in formation of a new Geography Department. No financial assistance came from any specific source.

Dr. E.G. Pleva of the University of Minnesota, by personal invitation of a committee of the University was the first professional geographer to be appointed. He came in 1938 to give geography courses in the Department of Geology. By 1946, 750 students were registered having increased from a registration of 140 in 1938. In 1947, geography was made a sub-department, under the Joint Department of Geology and Geography and in 1949 a separate department was established under the guidance of Dr. Pleva. Dr. Pleva's work in regional and town planning has received wide recognition. Mr. N. Nicholson, a climatology specialist, joined the staff at Western Ontario in 1946, leaving later to accept an appointment with the Dominion Geographical Bureau at Ottawa, later the Geographical Branch, Department of Mines and Technical Surveys. In the fall of 1949 Mr. R.W. Packer, was appointed to the staff. By 1950-51 8 full courses and one half course were offered along with 3 graduate courses.

Degrees

Western Ontario has set up an Honour Course in geography leading to a B.A. degree. Graduate courses are set up for an M.A. degree in the subject. The basis of theses for both degrees is a field problem.

Entrance to Geography Course

Students may enter the new Honour Geography Course from an Arts or a Science background, via Junior Group 1 or Junior Group 2 (see Calendar). The 1949-50 Calendar indicates that Geography 20 - Elements of Geography is offered as an optional subject in Junior Group 2. No geography is indicated in Junior Group 1.

Geographical Training

The 1949-50 Calendar indicates that one half-course and 6 full courses in geography were taught. The number of hours of geography instruction including laboratories, lectures and seminars, amounted to approximately 546 (26 week session)¹. Of these hours 156 were devoted to laboratory and

¹ No attempt was made here to include the hours of instruction in closely related cognate subjects. These are included in the 1950-51 record.

practical work, which included some field work. The number of hours indicated for the three graduate courses were 234. The total number of hours spent on geography instruction was 780. The new 1950-51 course in Honour Geography, includes 19 hours per week in the second, third and fourth years, on such cognate subjects as, Botany, Economics, Mathematics, (Mathematical Geography), Zoology, History, and Geology, (Drafting & Surveying). In the Honour Geography course set up in 1950-51, the total hours of geography instruction to B.A. Level = 756 of which 208 hours are spent in laboratory work. Hours of instruction to MA. level is 234 making the total hours of instruction in geography 990. The hours of geography instruction at Western Ontario include three cognate subjects, which are for instructional purposes, geography courses. These are (1) Geology 256, a full course in drafting (2) mathematics 29a or 359b, a half course on map projection and (3) Geology 356, a full course in surveying and drafting.

Field Camp

Geography students at Western Ontario are expected to spend two summers in employment of a geographical nature. Field excursions are undertaken, usually at the request of some organization viz an urban survey of Pt. Stanley. At graduate level, summer employment on assigned problems, is a requisite part of the training in geography.

3. JOINT DEPARTMENTS, IN WHICH GEOGRAPHY IS A DIVISION

(i) University of British Columbia (Department of Geography and Geology)

Physical Geography was taught as far back as 1915 in the Department of Geology and Mineralogy (Professor R.W. Brock and later by S.J. Schofield). It was Dean Brock's work which led to the introduction of geography into the university, through an existing department viz. Geology. In 1919-20 a course was offered on the "Geology of the World and Geological Influences", covering among other topics "the influence of geological formations and topographic forms on nations and on the distribution and development of plants, animals and man". In 1920 a course in Meteorology and Climatology was introduced. This was continued in 1921 and in subsequent years. In 1922-3, the name of the Department was changed from that of Geology and Mineralogy to that of Geology and Geography, which has been the designation ever since. At the same time a new course was initiated, "Geography:- Principles of Geography", given by Dean R.W. Brock and Dr. S.J. Schofield¹. From 1922 to the present Geography has been taught with increasing emphasis until by 1946, seven courses were available to students, making it possible for them to major in Geography. By 1949, the number of courses had been increased to 9. In 1950-51, the number was increased again to eleven full courses. In addition the department offers three graduate courses.

Entrance to Geography Course

Entrance to the Geography Courses is made through the First and Second

¹ Williams, N.Y. "Geology and Geography", Royal Society of Canada, 1946.

year course as designed in the Faculty of Arts and Science. In these years, Geography 101, 201 and 202 are offered. All students intending to major in Honour Geography are required to take Geography 101 as prerequisite to all other courses in Geography.

Degrees

The degree of B.A. is granted with Honours or as a General Course degree, the first requiring 60 units, the second 66 units¹. Again the Honour B.A. degree requires 12 units from any of the 3rd and 4th year courses in Geography.

Thesis

The Calendar would indicate that no field problem is required as a basis for theses either for a B.A. or an M.A. Library research may be assumed.

M.A. Degree

The Master's degree is offered by a single department or by a combination of departments provided that the thesis covers work in both departments and is approved by both departments. At least 18 units of courses (numbered 300 or above) including a thesis, counting from 3 to 6 units, will be required for the Master's course. The usual prerequisite for entrance to M.A. work in Geography (according to the Calendar) is an Honours Degree or 12 units in advanced courses in Geography. Following this, 9 units in Geography including a thesis counting 3 units, and other courses, are required.

Geography Training

In 1949-50, 9 full courses in Geography were offered; on the basis of hours of instruction including laboratories, lectures and seminars, all Geography courses added up to 783 hours (27 week session). Of these hours 297 were given to laboratory instruction. The Calendar designated 3 courses as being for graduates. These graduate courses amounted to approximately 81 hours. The total number of hours of instruction to M.A. level came to 864. In 1950-51 with the number of courses increased to 11 full courses, the total number of instruction hours amounted to 877 to B.A. level and 1033 to M.A. level.

Field Camps

The Calendar does not indicate any provision for field camps, field excursions, etc., though these may be implicit in the courses as outlined.

(11) Laval University (The Institute of History and Geography)

The Institute of History and Geography was founded in 1946 as an outgrowth of widely recognized work in historical geography in the Department of History. The purpose of the Institute was to facilitate the study of these two subjects and to train specialists capable of making a contribution to the progress of Canada. The course began in

¹ See Note 1, page 46

September 1947. The instruction in geography did not begin until September 1948. The Institute obtained the services of one professor of geography, Monsieur Pierre Deffontaines, a scholar of international reputation. Later, the services of Monsieur Michéa, an ethnographer, and Monsieur Jacques Rousseau were obtained. During this time, geography was taught only to the candidates in history. Later, instruction was offered to students who wished to acquire a licence or a maîtrise in geography.

In 1949, Mr. Pierre Biays came from France to occupy the Chair of Geography. In January of 1950 M. Pierre Deffontaines returned from Europe, to give two certificate courses in geography. M.J. Baticle joined the staff in the fall of 1950¹.

At the present time, students are offered two certificates in geography.

Geographical Training

In the 1949-50 academic year, 8 courses in geography were offered amounting to 280 hours of geography instruction, in lectures, seminars, laboratory and field excursions. Another 30 hours of lectures were given to students attending the summer course². In the 1950-51 academic year, 315 hours are devoted to geography instruction in lectures, seminars, laboratory and field excursions. In addition, a course in English, with 60 hours of lectures, is given, with at least half the course devoted to geographical vocabulary.

Degrees

LèsL

To be admitted to this course a student must have a diploma or certificate of bachelorship or diplomas judged as being equivalent. A written and oral examination must be passed in the following: (a) General Geography (b) Regional Geography (c) History of Canada (d) Modern History.

Two years attendance at the University is required.

M.A.

The rules and regulations for the degree are the same as those for the LèsL. However, only one year of attendance at the University is required, or two summer sessions and one semester. The candidate does not have to write a thesis. Those who wish to prepare a thesis must apply to the school of Graduate Studies.

Certificate

In the certificate course, 22 lessons in geography are given by Dr. Dagenais, and a series of lectures by Jacques Rousseau and Jean Michéa on human geography.

The number of hours of instruction in the Certificate courses cannot be judged from the Calendar.

¹ Letter from Laval University through Andre Patry, in 1950.

² Attendance is not compulsory for regular term students.

B. GEOGRAPHERS WHO ARE MEMBERS OF FACULTIES OF
CANADIAN UNIVERSITIES AS OF DECEMBER, 1950
(THOSE ON LEAVE OF ABSENCE ARE OMITTED)

MCGILL UNIVERSITY

Department of Geography

Associate Professor
Associate Professor
Assistant Professor
Honorary Lecturer

F.K. Hare, B.Sc., Ph.D. (Chairman)
B. Zaborski, Ph.D.
J.B. Bird *M.A.*
A.L. Washburn

McMASTER UNIVERSITY

Department of Geography

Assistant Professor
Lecturer
Sessional Lecturer

L. Reeds, M.A.
Miss M. Montgomery, M.Sc.
H. Woods, B.A.

UNIVERSITY OF MONTREAL

Department of Geography

Professor
Associate Professor
Lecturers

P. Dagenais, Ph.D.
B. Brouillette, Ph.D.
A. Courtemanche, L.Sc.
F.K. Hare, B.Sc., Ph.D.
R. Garry
M. Tiphane
M. Veyret

UNIVERSITY OF TORONTO

Department of Geography

Professor
Associate Professor
Associate Professor
Lecturer
Lecturer
Lecturer
Lecturer
Lecturer
Cartographer

Griffith Taylor, D.Sc.
G. Tatham, Ph.D.
D.F. Putnam, Ph.D.
D.P. Kerr, M.A.
J. Spelt, M.A.
W.C. Wonders, M.A.
B. Shindman
S. Kling
Miss M.K. Moore, B.A.



UNIVERSITY OF WESTERN ONTARIODepartment of Geography

Professor
Lecturer
Instructors

E.G. Pleva, Ph.D.
S. Weyl, M.A.
A.J. Barker, B.A.
R.W. Packer, M.A.

UNIVERSITY OF BRITISH COLUMBIADepartment of Geology and Geography

Associate Professor of Geography
Associate Professor of Geography
Visiting Professor (Geography)
Assistant Professor of Geography

J. Lewis Robinson, Ph.D.
J.R. MacKay, Ph.D.
W.G. Kendrew, M.A.
J.D. Chapman, B.A.

LAVAL UNIVERSITYDepartment of History and Geography

Professor of Geography
Professor (Geog.)
Professor (Geog.)

Pierre Deffontaines, DesL.
Pierre Biays, LèsL.
J. Baticle

CARLETON COLLEGE (OTTAWA)Faculty of Arts

Sessional Lecturer in Geography
(Day Division)

Jessie W. Watson, M.A.

Sessional Lecturer (Extension Division)

J.W. Watson, M.A. Ph.D. F.R.G.S.

UNIVERSITY OF MANITOBADepartment of Economics, Sociology and Geography

Assistant Professor of Geography

T.R. Weir, M.A.

UNIVERSITY OF OTTAWAFaculty of Arts

Lecturer in Geography
Lecturer in Geography

T. Jost, M.Ph.
A. LaRocque, B.A.

C. GEOGRAPHY IN OTHER CANADIAN UNIVERSITIES¹

INTRODUCTION

Besides the six universities where students may obtain degrees in Geography, there are 14 universities in the Dominion where geography subjects are taught, namely Acadia, Alberta, Bishop's, Carleton College, Dalhousie, Manitoba, Newfoundland, Mount Allison, New Brunswick, Ontario Agricultural College, Ottawa, Queens, Saskatchewan, Sir George Williams College.

(i) ACADIA UNIVERSITY

Three courses in geography are taught in the Department of Geology. Two are half-course subjects, and the third is offered in addition to the work outlined in Practical Geology. The three courses are:- (1) Principles of Geography; (2) Geography of North America; (3) Physiography.

All three are option subjects only. The number of hours of instruction (15 weeks in First Term; 11 weeks in the Second Term), amounts to 78 hours. Lecture work only is indicated. No geographer is included in the staff list.

(ii) UNIVERSITY OF ALBERTA

Plant Geography and Ecology

Distribution of vegetation in time and space considered from a dynamic point of view, is the only course taught with geographical connotations. It is included among other Honour and Graduate courses in 4th year in the Department of Botany.

The hours of instruction per week are 9 hours lecture - laboratory plus field work. The extent and nature of the field work is not indicated in the Calendar. The number of hours of instruction is: 144 hours of lectures and 72 hours of laboratory work. The subject is taught by three staff members in the Botany Department. Viz. Professors Moss, Whyte and Cormack. No recommended text is indicated in the Calendar.

(iii) BISHOP'S UNIVERSITY

A single course in geography is given. This is essentially a history of geography. It is a prerequisite in the Economics Course (Pass and Honour B.A.) and an option in the First Year of the Pass B.A. course; and is offered in the High School Certificate Course (Arts Division - First Year).

¹ The following notes on geography are taken from the 1950-51 Calendars.

Lecture Time - 2¹/₂ hours per week (12 weeks in first term - 15 weeks in second term). The number of hours of instruction amount to approximately 54 hours. No geographer is indicated as being on the staff.

(iv) CARLETON COLLEGE

Two courses in Geography are offered to second year students working towards a Pass or Honour B.A. degree.

Geography 1, General Geography. The general geography of the world special emphasis on the economic and political geography of Europe and North America. (Two hours a week in the Extension Department).

Geography 2, The Geography of Canada, a regional geography of Canada including a description of the physical economic and social geography of the major regions of the country. (two hours a week of lectures, and two hours a week of laboratory). The courses are given by qualified geographers; the regular day course (Geography 2) being under Mrs. J.W. Watson, M.A. (Edin.)

(v) DALHOUSIE UNIVERSITY

At Dalhousie University, in the Faculty of Arts and Science, a course in Economic Geography (optional) is offered for those students working toward a Bachelor of Commerce degree. It is offered in 1949-50 and in alternate years. A prerequisite subject is Economics 1.

The subject embraces a study of the economic and geographic factors underlying the structure of modern society, with particular emphasis upon the North American Continent. Lecture time is 2 hours per week.

(vi) UNIVERSITY OF MANITOBA

Geography is grouped with Sociology and Economics in the Department of Economics, Sociology and Geography in the Faculty of Arts and Science. Courses in geography are provided for students wishing to take Honours work in Geography.

Geography Training

5 full-year courses and 1 half course in geography are listed in the Calendar for 1950-51. The total hours of instruction amount to 310 hours. The hours of laboratory instruction is not designated.

The courses in geography are taught by a qualified Geographer, Prof. T.R. Weir, M.A. (~~Ter.~~) (SYRACUSE)

102 - Geography - Physical and Cultural (1 hour a week, first term; two hours a week, second term).

111 - Elements of Geography. (one hour a week, full term).

201 - Physical Geography. (3 hours a week, full term).

202 - Physical Geography (3 hours a week, half term). The first term of course 201.

301 - Geography of Anglo-America. (3 hours a week, full term).

401
~~302~~ - Geography of Anglo-America. (3 hours a week, full term).

In 1949-50 Agricultural geography was the only geography course offered at the University. The course was a historical sketch of the development of agriculture - natural and economic environment. It was offered in the Department of Economics, though it was not included in the prescription of courses for students who elect Honours in Economics.

(vii) UNIVERSITY OF NEWFOUNDLAND

Geography 1 - An outline of world Geography on the basis of the major natural regions. (4 hours a week).

Text - Pickles, The World. Bartholomew's Oxford advanced Atlas.

Geography 2 (a) A regional survey of Europe including the British Isles. (b) The geographical control of history. (4 hours a week).

Text - Blanchard and Crest, Europe.

Lecturer: H.B. Goodridge, M.A., a former member of the Economics Staff.

(viii) MOUNT ALLISON UNIVERSITY

One course in geography - The Canadian Economy - is offered in the Department of Economics and Political Science. This subject is an elective for the B.A. degree, in the Junior years or Senior years (3rd or 4th year).

The Canadian Economy. A survey of Economic Geography serves as an introduction to the subject matter of the course. Topics: population, primary industries, agriculture, transportation with emphasis on railways, trade and trade politics. Prer: Economics 1.

No lecture hours are assigned to the subject. The course is taught by some member of The Economics and Political Science Staff.

(ix) UNIVERSITY OF NEW BRUNSWICK

Although this University was the first to offer a course in geography in Canada (in 1800) the subject was allowed to lapse. At present geography is represented by two courses in the Department of Geology and one in the Department of Economics. These include Introductory Physiography; advanced Physiography, and Economic Geography. Physiography is marked as elective in the third year of the Biology Course, and the mathematics and physics course, and as a prerequisite in the Geology Course. The Geology course leads to a B.Sc degree. Physiography also stands as an elective to be selected by General Science students in 3rd and 4th years. Again, it stands as an elective for those students who are taking single Honour or Combined Honour (B.A.) Courses, in Geology. Economic Geography is an elective for those taking a single Honours B.A. in Economics. Neither of the two Courses as offered as prerequisite or options in first and second year of the B.A. course.

The course in Physiography is assigned one lecture, one seminar and three hours of laboratory work per week. In an eleven week first term session the number of hours of instruction is 55, and in a thirteen week

second term session, the number of hours of instruction in this subject is 65. TOTAL HOURS = 120.

No lecture time is assigned to Economic Geography. It is however, a full term course. The staff teaching the two classes are members of the Geology Department and of the Economics and Political Science Department.

(x) ONTARIO AGRICULTURAL COLLEGE

Though not specifically designated as "geography", three courses offered may be said to fall within the field of geography. These are, Meteorology in the Department of Physics; Ecology of Field Crops and Plant Ecology in the Department of Field Husbandry.

The first term at OAC is eleven weeks, the second term of fifteen weeks duration. No lecture time is assigned to Meteorology, or to Ecology (fourth year). ~~For~~ Ecology (third year) = 60 (laboratory) hours.

Instruction in these courses is given by members of the staff in the Departments concerned.

(xi) THE UNIVERSITY OF OTTAWA

Ottawa offers two courses in Geography designated as, Geography and Economics 4a. The course in geography is taught by a professional geographer, Professor T. Jost, although his main duties are to teach Slavonic Studies in the University.

In the Curriculum

Geography 1 and Economics 4a are offered as:

(a) options in the General course leading to the pass degree of Bachelor of Arts.

(b) Geography 1 is compulsory in the First year of the B.A. with majors in Political and Social Sciences.

(c) Economics 4a, is compulsory in the First Year of Course leading to a degree of B. Comm. (i) with a major in accounting and (ii) with a major in Economics.

Geography Training

In a 29 week academic year the hours of instruction ²⁴ 3 hours a week per course amounts to 174.

(xii) QUEENS UNIVERSITY

Four courses given at Queen's, though not designated as geography, again fall within the general field. They are as follows:

(1) Biology 31. Plant Ecology. A study of the origin and development

of plant associations in relation to environment, latitude, climate etc. The course includes laboratory and field work. (2 hours of lectures per week: 3 hours of laboratories per week.

(2) Economics 4. Introduction to Economics. Economic geography; Economic history, especially of Europe; regional studies (3 hours of lectures per week). It will be noted that only part of the course of Economics 4, is designated economic geography. The strength given to geography would depend on the instructor).

(3) Geology 1¹ - An Introductory Course in Physiography and General Geology. The course is given in the Department of Geological Sciences. (Two hours lecture; two hours laboratory per week).

(4) Geographical Discovery and Exploration. This is offered as a reading course in the Department of History.

Biology 31 is offered in the Department of Biology. It is a prerequisite for Botanists majoring in Botany or Biology. It is not indicated either as an option or prerequisite in other courses.

Economics 4 is a prerequisite for a student majoring in Economics, or in Politics and for students taking Economics as one of the main subjects of the General Honours Course. It is an elective for students taking the Pass Course. It is normally included as one of the subjects, constituting a minor in Economics.

Geography for Teachers

(1) Economics 4 is offered in the summer school course for teachers and as an extramural subject. It is also offered for those working towards a Commercial Specialist's Certificate.

(2) 'Geology and Geography' is offered as a summer school course.

In the summer school course the number of hours of lectures average two hours per week. On this basis, the hours of instruction in a six week period, amounts to twelve per course. Students taking Economics 4 and Geology and Geography, receive twenty-four hours of lectures.

Geography Training

The number of hours of instruction in the three regular term courses is 276 hours of instruction of which 133 hours is in laboratory work. Total hours = 276.

(xiii) UNIVERSITY OF SASKATCHEWAN

The Calendar indicates two courses offered in Geography and designates

¹ The Calendar suggests this course as having possible value for those who contemplate teaching geography in schools.

them as such. The ~~Counselor~~ ^{LENDAR} does not indicate the two Geography courses as being either options or prerequisites in any particular course. Though included in the Department of Geology, they are not prerequisite for an Honour Course in Geology or in a Combination Course. Geology 1 or Geology 2 is indicated as a prerequisite for Engineers who take Human Geography. Presumably the two courses are free electives in the Department of Geology.

The two courses are half term ones, and consist of (1) General Geography - an introduction to the fundamentals of geography, and (2) Human Geography the second half of General Geography.

Geography Training

With three hours of lectures, and three hours of laboratory work per week the instruction time in a twenty-four week session, amounts to 72 hours of lectures and 72 hours of laboratory work. This is a total of 144 hours.

The courses in geography are taught by members of the staff in the Geology Department.

(xiv) SIR GEORGE WILLIAMS COLLEGE OF MONTREAL

A brief general statement lists the courses and hours but does not give detail.

Mr. M.H. Sinclair a qualified geographer, is a member of the staff. and gives the courses.

Geography 101 - Principles of Human Geography (full course)

Day Division: October to May, every year

Evening Division: October to May, every year

Lecture Time: Three hours per week (full term)

Geography 102 - Economic Geography (half course)

Day Division: - Not given 1950-51

Evening Division: Not given 1950-51

Lecture Time - Three hours per week ($\frac{1}{2}$ term)

These two Geography Courses are placed in the Social Sciences Division. The two courses are optional for students working towards a B.A., B.Sc., B. Comm. and for a Diploma of Associate in Arts, in Science, and in Commerce.

The hours of instruction (24 week session; ten weeks in first term; 14 weeks in second term) are approximately 102. Note that the course in Economic Geography is given only every other year.

D. OUTLINE OF GEOGRAPHY COURSES IN FIVE CANADIAN UNIVERSITIES WITH A DEPARTMENT OF GEOGRAPHY AND IN TWO UNIVERSITIES WITH JOINT DEPARTMENTS IN WHICH GEOGRAPHY IS A DIVISION¹.

1. INDIVIDUAL DEPARTMENTS OF GEOGRAPHY

(i) McGill University

The undergraduate work of the University, in Arts, in Pure Science, in Commerce, and in Fine Arts, is done in McGill College, usually called the Faculty of Arts and Science. The Courses offered by the Faculty are grouped in four ways in order to secure a co-ordination and integration of the courses of study - viz. the Humanities, Social Studies and Commerce, Physical Sciences, and Biological Sciences. The course of study in Geography is placed among the Social Studies. A candidate for a Bachelor or Arts, may acquire either a General or Honours Degree in the course of his choice.

In the first year of the B.A. and B.Sc. Course, Geography 12 is an optional subject. Geography, as a continuation and elective subject is among the subjects of study offered for the General Arts and Science Degree. An Honour Course in Geography is offered in the Second, Third and Fourth Years, for those wishing to acquire an Honour Degree in the subject in either Arts or Science.

The Geography Courses, offered at McGill College, are listed.

First Year

12. (1) The Elements of Physical Geography. (Full Course) three hours ... (In Science Division) no prerequisites required. Scientific study of man's habitat. The course is divided into two main parts:

- (a) The origin and world distribution of land-forms developed under different climates: Major earth resources, water, soils and minerals.
- (b) Climate and weather; physical processes and properties of atmosphere. The principal climatic belts of the world. Significance of climate as a factor confluencing human settlement.

Second and Third Year Courses

21 (2) The Elements of Social Geography. (Full Course) - Three hours (In Arts Division). No prerequisite.

Scope and aims of social geography: affinity to others sciences.
Nature of physical environment and man-land relationships. World distribution

¹ The following data ^{are} taken from the 1950-51 Calendars. The data on Laval ^{are} from a letter, via Andre Patry, 1950.

of foods, raw materials, and fuels in relation to changing needs of industry, commerce and population. Problem of land use and resource conservation. Select areal studies illustrating the role of geography in modern economic life.

22 (4) Practical Geography (Full Course) - one hour and laboratory periods (In Science Division). Prerequisite: Geography 12, 21 or Geology 1.

The construction and properties of common map projections. The analysis of topographic maps and aerial photographs. Photogrammetric techniques. Reconstruction of cultural landscape from cartographic evidence. Study of British, U.S., Canadian and European topographic series. Special purpose maps: e.g. land use, commodity, population, etc.: their construction and interpretation. Weather permitting, this course will include practical fieldwork in the Montreal area.

Third and Fourth Year Courses

31 (5) The Geography of Canada - three hours (full course)
(In Arts Division) Prerequisite: Geography 12 or 21.

33 The Geography of the United States (full course) - three hours
(In Arts Division). Prerequisite: Geography 12 or 21.
(Not given in 1950-51).

35 (6) The Geography of Europe (Full Course) - three hours
(In Arts Division). Prerequisite: Geography 12 or 21.
(Not given in 1950-51).

37 The Geography of the Orient (Full Course) - three hours
(In Arts Division). Prerequisite: Geography 12 or 21.
(Not given in 1950-51).

39 The Geography of the U.S.S.R. (Full Course) - three hours.
(In Arts Division) Prerequisite: Geography 12 or 21.

In courses 31, 33, 35 and 37, the general principles enumerated in courses 12 and 21 are applied to specific environments. These are studied primarily from the standpoint of their physical and cultural distributions, including the areal localisation of ways of living, past and present. The importance of the environment in human affairs is assessed, and the findings applied to contemporary problems.

41 Economic Geography (Full Course). The first half only may be taken as a half course.

(a) - First Term. The content and methodology of Economic Geography. The influence of geographical factors on economic activity. Land use and occupations of mankind. Types of Agriculture as influenced by natural conditions and historic developments. Factors influencing location of industries.

(b) - Second Term. Regional survey of the economic geography of a chosen continent. Comparisons with conditions and developments in North America.

- 42b. (7) The Technique of Regional Studies (Half Course) First term - three hours. (In Science Division). Prerequisite: Geography 12, 22 or Geology 1.

The idea of regional survey. Survey of land use. Classification of land according to fertility, site and existing use (e.g. agricultural, industrial, waste). Optimum land use in relation to functional requirements. Geographical significance of resource conservation. Spread of cities across agricultural land.

Study of existing regional surveys and projects: the Land Utilization Survey of Great Britain, The Tennessee Valley Authority and other North American projects.

43. (9) Historical Geography (Full Course) - three hours (In Arts Division). Prerequisite: Geography 21. (Not given in 1950-51).

Relations between man, habitat and economy in early, medieval and modern times. Reconstructing the geographical milieu of past cultures. Geographical conditioning of historic trade routes, migrations and colonizations. Climate and civilization.

- 44 Meteorology (Full Course) - three hours, Mathematics and Physics students only.

Physical properties of the atmosphere. Radiation and the heat balance; the causes of atmospheric circulation. Vertical motion in the atmosphere, and formation of clouds and rain. Winds and pressure distribution. General circulation of atmosphere and development of fronts. Anticyclones and depressions. Climates of the world: regional meteorology.

Use of meteorological instruments. International codes and plotting symbols. Practical work on synoptic charts from selected daily records.

- 45 (b) Political Geography (Half Course) Second Term - three hours (In Arts Division). Prerequisite: Geography 12 or 21. (not given in 1950-51).

Political Geography as a branch of Geography. Historical development of views concerning the relations between environment and nation. The concept of the nation and the geographical approach to the problem of the development and conflict of nations. The changing map of the world. Geographical aspects of some modern national problems.

- 46 Climatology (Full Course) - three hours (In Science Division). Prerequisite: Geography 12.

Systematic and regional study of world climates, with special reference to the northern hemisphere. Principles and methods of dynamical, physical, and bio-climatology. Major features of world circulation. Climatic classification: systems of Koppen and Thornthwaite. Physiological significance

of climate for plant and animal kingdoms, including man. Climate and hydrology: run-off, evaporation, and percolation.

HONOUR GEOGRAPHY COURSES WITH COGNATE SUBJECTS

First year students intending to take Honours in Geography are normally required (1) to have passed Geography 12 with at least good second class standing before being permitted to take Honours, and (2) to make their selection of Second, Third and Fourth Year Courses from the following list;

I. B.A. Candidates

Second Year: Geography 21, 22 (compulsory):
Geology 1, 2a: Sociology 21: Economics 100.

Third Year Geography 31 (compulsory) 33, 35, 36, 39;
Economics 351, History 4.

Fourth Year Geography 41 (compulsory), 42b 43, 45b, 46:
Sociology 35a (or 33b) and 5a.

II. B.Sc. Candidates

Second Year: Geography 21, 22 (compulsory):
Geology 1 (compulsory): plus one or more
approved courses in Botany, Physics, or Mathematics.

Third Year: Geography 31, 33, 35, 37, 39: plus one or more
approved courses in Geology, Physics, Surveying, or
Mathematics.

Fourth Year: Geography 41, 42b, 44, 45b, 46: plus one or more
approved courses in Geology, Botany or Physics.

Note: With the consent of the Department, the Geography courses prescribed for the third and fourth years can be interchanged.

Faculty of Graduate Studies

Arts graduates who have completed, with at least second class standing, four full courses (or their equivalent) in Geography together with such courses in cognate subjects as the Chairman of the Department deems appropriate, may be admitted to candidacy for the M.A. degree, and become eligible to take the examination and submit a thesis at the end of one session. All others will normally be required to spend a preliminary qualifying session on an approved programme of studies, or to spread their M.A. work over two sessions.

Candidates must:

- (1) pass final examination in two of the three graduate courses listed below:

- (2) Submit a thesis on an approved subject falling within the scope of one of them:
- (3) attend prescribed courses in History, Economics, Sociology or other cognate subjects.

In arriving at the candidate's final standing, primary consideration will be given to the quality of the thesis.

Regular lecture or Seminar Courses available to M.A. candidates are listed below as courses, 61, 62, 63 and 67. In special circumstances, the student may be permitted to substitute one or more of the M.Sc. courses (64, 65 and 66).

M.A. Courses

61. History of Geographical Science and Discovery - one hour.
62. Historical Geography of a Select Area in North America - one hour.
63. Regionalism and Regional Survey - one hour Professor Hare.
67. The Geography of the Arctic (see under M.Sc. courses) - one hour.

Requirements for the Degree of Master of Science

Science graduates who have completed, with at least second class standing, three full courses (or their equivalent) in the Department of Geography, and have taken Geology 1 or 2, together with such other courses in cognate subjects as the Chairman of the Department deems appropriate, may be admitted to candidacy for the M.Sc. degree and become eligible to take the examinations and submit a thesis at the end of one session. All others will normally be required to spend a preliminary qualifying session on an approved course of studies, or to spread their M.Sc. course over two sessions.

Candidates must:

- (1) pass final examinations in two of the three graduate courses listed below;
- (2) submit a thesis on an approved subject falling within the scope of one of them;
- (3) attend prescribed courses in Geology, Botany, Physics or Mathematics.

In arriving at the candidate's final standing, primary consideration will be given to the quality of the thesis.

Regular lecture or seminar courses available for M.Sc. candidates are listed below; in special circumstances the candidate may be permitted to substitute one or more of the M.A. courses (61, 62 and 63).

M.Sc. Courses

64. Advanced Climatology
One hour Professor Hare
65. The Physical Geography of a select area of North America
One hour Professor Hare,
and Zaborski.
66. Cartography, with particular reference to Special Purpose Maps.
One hour Professor Zaborski
67. The Geography of the Arctic
A seminar course conducted by Dr. Washburn, Director of the Arctic
Institute of North America, and members of the Staff.
One hour

Adequate laboratory and library facilities exist for research in all the above-named fields of study.

Regulations for the Degree of Doctor of Philosophy

Students who have attained high standing in the M.A. or M.Sc. in Geography at McGill University, or have equivalent qualifications, may be permitted to proceed to the Ph.D. in two further years. Only in exceptional circumstances will a student be allowed to register for the Ph.D. without having first taken the Master's degree.

All Ph.D. students will be required to undertake at least one extended programme of supervised field work.

Normally the Department will restrict admission to the Ph.D. course to students prepared to work in one or other of the following fields: The Physical, Regional and Historical Geography of North America (including the Arctic) and Europe, The History of Geographical Exploration in North America, and Climatology.

Ph.D. Course Work

A broad familiarity with the entire field of geographical science will be assumed by all students who enter the Ph.D. years of graduate study. A formal routine of course-work will not be laid down for such students, as their needs may differ, but in general it may be said that four or five formal courses (selected by the Department) beyond the requirements of the Master's Degree will be required. Before he is permitted to submit his thesis, the student will be required to present himself for written examination in the following broad fields:-

1. Two three-hour papers in the systematic branches of geography viz. physical, economic and historical geography; cartography.
2. Two three-hours papers in the geography of selected major regions (e.g. Europe, Canada, the Arctic.)

In these papers, the student will be expected to demonstrate a high level of professional competence, especially as regards familiarity with the literature, methodology and organisation of modern geography.

M.Sc. in Meteorology

A limited number of students who have adequate training in Mathematics and Physics, and who have access to facilities for research in Meteorology may be accepted as candidates for the M.Sc. in that subject.

Geography Summer School¹

The Geography Summer School, at Stanstead College, Stanstead, Quebec, was inaugurated in 1947. The school is designed to meet the needs not only of professional teachers and students of the subject but also of civil servants, military personnel, and indeed of all those who seek a closer insight into the relations, existing between man and his environment. In 1949 instruction was offered at the graduate and undergraduate level.

GRADUATE COURSES

- (1) The New Europe - Professors Evans and Zaborski
Daily (Mon. - Fri.) 9-11 a.m. and Mon. 2:30 - 5:30 p.m.

Geographical setting and historical role of Europe. Reconstruction and resettlement problems arising from the war and peace settlements, with particular emphasis on Western and Central Europe.

- (2) Technique of Area Studies - Professors Hare and Mackay
Tues. and Fri. 2:30 - 5:30 p.m.

Practical course for advanced students. Procedures for field research: physiographic, climatic, biogeographical, cultural. Field observations and mapping. Use of aerial photographs. (Students registering for this course will be expected to attend the week-end excursions).

- (3) Polar Problems - Colonel Baird, Drs. Dugal, Siple and Steffanson and Sir H. Wilkins.
Daily (Mon. - Frid.) 9-10 a.m. and Tues. 2:30 to 5:30 p.m.

Adaptation of man (native and white) to Arctic and Subarctic. Clothing, shelter, food, travel and transportation. Physical, geopolitical, economic and physiological problems.

¹ Attendance at the Geography Summer School by students in Honour Geography Courses (regular term), is not compulsory. Academic credits are granted to those fulfilling the examination requirements. See Examination and Credits, p. 28.

- (4) Population Problems - Professors Baker, Brouillette, Evans and Stamp.
Daily (Mon. - Fri.) 12 noon - 1 p.m. and Thurs. 2:30 - 5:30 p.m.

The changing geographical pattern and structure of population.
Food resources in relation to world needs, present and future.
Possibility of extending habitable earth. Recent land settlement;
selected case studies. Demographic aspects of town and country
planning.

- (5) History of Geographical Discovery - Professor Kimble and Dr. Steffanson.
Daily (Mon. - Fri.) 11 a.m. - 12 noon and Wed. 2:30 - 5:30 p.m.

Selected studies in development of earth-knowledge, with special
reference to mediaeval and modern times. The great explorers;
objectives, methods and achievements.

- (6) Climatology - Professor Hare
Daily (Mon. - Frid.) 10-11 a.m. and Mon. 2:30 - 5:30 p.m.

Advanced dynamic and geographical climatology, with special reference
to Arctic and Subarctic climates. Special emphasis will be laid upon
(i) climate as an ecological factor; (ii) climatic classification; and
(iii) the exploration of the atmosphere in recent years.

UNDERGRADUATE COURSES

- (7) The Geography of the U.S.S.R. - Professor Zaborski
Daily (Mon. - Frid.) 12 noon - 1 p.m.

Territorial development of Tsarist Russia and U.S.S.R. Physical
regions. Distribution of population, languages and ethnic groups.
Soviet agriculture and industry. Wartime and post-war changes in
national economy.

- (8) The Geography of Canada - Professors Brouillette and MacKay
Daily (Mon. - Fri.) 11 a.m. - 12 noon

World setting and relationships. Physiography, climatic, bio-
geographic and cultural patterns, with special reference to French
Canada.

- (9) The Changing Cultural Landscape - Professors Evans and Kimble.
Daily (Mon. - Fri.) 9 - 10 a.m.

The Dynamic nature of the geographic environment. The extension
of the habitable earth in historic times. Selected areal studies
(Ancient and modern societies) to illustrate the impermanence of
physical and cultural distributions. The problem of landscape
control.

- (10) The Geography of the Arctic - Colonel Baird
Daily (Mon. - Fri.) 11 a.m. - 12 noon.

World setting and relationships. Historical significance of the Arctic. Physiographic, climatic, biogeographic patterns. Living conditions; regional variations. Present economic and strategic roles. Colonization prospects.

- (11) The Geography of Agriculture - Professors Baker and Stamp.
Daily (Mon. - Fri.) 10 - 11 a.m.

Climatic regions and their characteristic food products, Different types of farm economy. The expansion of the world's harvests: agronomic and technologic possibilities.

- (12) Physiography - Professors Hare and MacKay
Daily (Mon. - Fri.) 9 - 10 a.m. and Tues. 2:30 p.m.

Principles of physiographic and geomorphological study. Landscape development under humid and glacial environments. Evolution of Appalachian-Acadian system with special reference to the Eastern Townships and New England.

Examinations and Credits

Examinations in each course of study will be held towards the end of the last week of school. Students who fail to take or pass these examinations will not be eligible for credits, as no supplementary examination can be arranged under any circumstances. Credits may be transferred to other institutions. Applications for a transfer of credits should be addressed to the Registrar of the University.

(11) McMASTER UNIVERSITY

The Honour Course in Geography at McMaster University requires four years from Grade XIII or from the completion of the Preliminary year, to a Bachelor of Arts degree. Admission to the Honour Geography course requires completion of the Preliminary year under Social Studies with at least second class average in Geography 103, 133, and Geology 103 or completion of the Preliminary year under Physical Sciences with at least second class average in Geology 116 and Chemistry 117. These two preliminary years courses will be outlined later.

The courses in Geography at McMaster University are as listed.

103. Introductory Human Ecology

A survey of human development from the origins of mankind to the evolution of the chief human occupations and systems of society. To be taken as a basis of study in geography, geology and sociology, Illustrated with slides. Text: Herbertson, Man and His Work. Three hours second term.

133. Economic Geography

An introductory study of the economic activity of man as conditioned with geographic factors. The economic geography of the seven

continents with some emphasis on Canada, the United States and the British Commonwealth. Of value to those interested in history, political economy, economics and conservation.
Text: Jones and Darkenwald, Economic Geography.
Three hours second term.
Prerequisite: open.

203. Elementary Meteorology and Climatology.

An elementary study of the basic principles of modern meteorology, a study of the various climatic classifications and some of the aspects of applied climatology.

Text: Trewartha, Elements of Weather and Climate.

Two hour and one laboratory. (2) first term.

Prerequisite: Geography 103 or 133.

214. Cartography I

Drawing, Graphics, and Topographic Mapping.

Designed to familiarize students with drawing pencils, pens, papers and mapping instruments. Detailed study of topographic maps, block diagrams, map symbolization, physical and cultural map interpretation.

Text: Raisz, General Cartography.

One hour and one laboratory. (3); first and second terms.

Prerequisite: by permission of the Instructor.

223. Anthropology

The customs, beliefs, arts and crafts of primitive people, as they are related to the form of society, nature of the economy and influence of the environment. Illustrated with films, slides and maps.

Texts: Daryl Forde, Habitat, Society and Economy;
Havemeyer, Ethnography.

Three hours first term.

Prerequisite: open

236E. General and Economic Geography

A study of the earth's resources and their use by man.

243. Canada, An Economic and Human Geography

A study of the general, economic and social geography of Canada.

Text: Taylor, Canada.

Two hours and one laboratory. (2); second term

Prerequisite: open.

306. Historical Geography a broad geographic panorama, of physical and human elements which together influence the history and political economy of Europe and North America.

Text: Pounds, Historical Geography of Europe.

Brown, Historical Geography of the United States.

Three hours lectures and seminars; first and second term.

Prerequisite: a first-year Geography.

313. Urban Ecology

The evolution of cities and growth of an urban, industrial society showing the influence of geography on the form and structure of the city, and the influence of urban forms on society. A particular study will be made of contemporary social hazards, such as unemployment, poverty, family disorganization, juvenile delinquency, crime, vice, etc.

Texts: Gist and Halbert, Urban Ecology

Warner and Lunt, Yankee City.

Three hours; second term.

Prerequisite: open.

322. Elements of Field Surveying.

Practical study of methods of terrain measurement, including pace and compass surveying, plane-tableing, topographic levelling, cross-country traversing; also the use and interpretation of aerial photographs.

One hour and one laboratory. (3) first term.

Prerequisite: registration in Pass Geography and Geology or Honour Geology.

334. Cartography II

Field Surveying and Field Methods. Elementary surveying, plane-tableing, aerial photogrammetry. A study of methods used in the field and in the office in the collection, sorting, evaluating and representation of data. The greater portion of the time will be spent in the field.

One hour and one laboratory. (3) first and second terms.

Prerequisite: by permission of the Instructor.

343. Development of Russian Civilization

A geographic analysis of Russian civilization through history. Greatest emphasis will be placed on the social, economic and political geography of the U.S.S.R. and will include such topics as industrialization, the forestry, mining and fishing, industries, and the place of the Union in world affairs.

(Not offered in 1950-51)

Text: Cressy, Basis of Soviet Strength.

Three hours, first term.

Prerequisite: open.

356E. The Geography of the Americas

A class in the physical, historical and economic geography of North, Central and South America, designed to give a general and a regional survey.

Texts: White and Fosco, The Regional Geography of Anglo-America.

James, Latin America.

363. Latin America

A class in the physical, historical, and economic geography of Latin America. Some attention will be given to trade relationships and possible future development of South and Central America.

Text: James, Latin America.

Two hours and one laboratory. (1) first term.

Prerequisite: open

405. The United States

The regional geography of the United States of America in terms of structure, climate, soils, resources and their utilization. One hour a week will be devoted to laboratory exercises on topographic maps and seminars on special problems. Text: White and Foscoe, The Regional Geography of Anglo-America. Two hours and one laboratory. (1) first and second terms. Prerequisite: a Junior Division Geography.

414. Regional Geography of Europe. A study of the physical and human Geography of Europe. The general pattern of structure, landform, climate and soils will be presented, together with a study of the resources and the distribution of population. Some attention will be given to a detailed analyses of selected regions. Text: Shackleton, Europe, a Regional Geography. Two hours; first and second terms. Prerequisite: a Junior Division Geography.

444. Cartography III

Mathematical Geography, Map Intelligence and Compilation. Advanced studies of the mathematical aspects of cartography. Problems of a map library; indexing, cataloguing and filing of maps, foreign map sources and types; compilation of maps for particular problems. 1 hour and 1 laboratory. (3); first and second terms. Prerequisite: by permission of the Instructors.

453. Agricultural Geography

This study will include an analysis of the basic physical factors related to crop ecology, a discussion of the origins and historical spread of the various domesticated crops and animals and a systematic study of the agricultural regions of the world. Part of the laboratory time will be devoted to studies of agricultural problems in the field. Of value to those interested in economics, botany, and conservation. Text: Klages, Ecological Crop Geography. Two hours and 1 laboratory. (1) first term. Prerequisite: open

476. Regional Thesis and Field Camp

Under the direction of the Staff, each Honour Course student must undertake a field study of a particular region and write a thesis embodying the results of original research, and showing a knowledge of field methods, and cartographic representation of regional data.

A field camp will be held in September of each year for third and fourth year Honour Geography students. A written report of the work done during the week in the field, must be presented by each student.

Course Work Leading to an Honour B.A. Degree in Geography

The arrangement of Geography Courses in the Three Years of undergraduate work in Honour Geography is listed below:

Year II: - Candidates from Social Studies.

(q) Geography 203, 214, 223, 243, Geology 116.

(r) Biblical Literature 202, Botany 243, English 253, four to six units of Language or History; Physical Training.
31-33 units.¹

Year II: - Candidates from Physical Sciences

(q) Geography 203, 214, 223, 243.

(r) Biblical Literature 202, Botany 243, four or six units from French 206, German 206, 224 or English or Political Economy 106, six units of History: Physical Training.

(e) Three units elective 31-33 units

Year III

(q) Geography 306, 313, 334, 343, or 363

(r) History 306 or Geology 346;
Sociology 303, Philosophy 346, two units of Religious Studies
33 units

Year IV

(q) Geography 405, 414, 444, 453, 476

(r) Geology 363; History 406 or six units elective in the Senior Division 31 units

GEOGRAPHY IN PASS AND HONOUR COURSES LEADING TO A DEGREE OF BACHELOR OF ARTS.

Pass Courses

1. Conservation and Recreation Planning

Admission: Completion of General and Philosophical Studies including Botany and Zoology as Science and Geography 133 and Geology

¹

THE UNIT SYSTEM OF ACCREDITATION

The credit value of subjects is rated in terms of units. A unit consists of one lecture per week per term or one continuous laboratory period of not less than two and not more than three hours per week per term.

Subjects of the Preliminary Year are numbered 13 to 99; Year I subjects, 103 to 199; Year II, 203 to 299; Year III, 303 to 399; Year IV, 403 to 499; Year V, 503 to 599; graduate studies are numbered 600 or over.

103 as electives.

Year II - Geography 203, 214

Year III - Geography 313, 332, 453.

2. Geography and Geology

Admission: Completion of Social Studies, including Geography 103 and Geology 103.

Year II - Geography 203, 243

Year III - Geography 322, 405, Geography 343, or 363.

Regulations and Course Work leading to an M.A. Degree

Candidates for the Degree M.A. in Geography are required to obtain satisfactory standing in:

- (a) three classes to be chosen from the fields listed below.
- (b) a comprehensive examination in Physical, Human and Regional Geography and in Cartography.
- (c) a field investigation and thesis.
- (d) an oral examination on the thesis.

Studies in the following fields are offered:

Regional Geography of North America
 Land Classification and Utilization
 The Geography of Settlement
 Special Problems in the Geography of U.S.S.R.
 Research in Cartographic Methodology.

(iii) UNIVERSITY OF MONTREAL

Department of Geography - (Faculty of Letters)

The courses given at the Department of Geography prepare candidates, for certificates, diplomas and the following grades: certificate in higher studies, diploma of geography, Bachelor of Arts, Master of Arts, Doctor of Arts (Ph.D.), Licentiate of Letters, Doctor of Letters.

Certificates and diplomas in higher studies in geography are meant particularly for those students, who, not possessing the Bachelor's Degree, wish at the same time to acquire a deeper knowledge in geographic discipline. The Institute gives out three certificates:

- (1) one in general geography
- (2) one in regional geography
- (3) one in the geography of Canada.

Master and Doctor of Arts in Geography

Master of Arts

Candidates for an M.A. in geography should fulfill the following conditions:

- (a) possess a bachelor's degree and a background, judged sufficient in geography.
- (b) to take a certain number of courses, seminars and practical work (minimum of 16 credits, 240 hours).
- (c) to write a thesis under supervision.

Doctor of Arts (Ph.D.)

- (a) possess an M.A. in geography
- (b) to register in the courses of the Institute for two years.
- (c) take a certain number of courses, seminars and practical work.
- (d) to write a thesis under supervision and defend it before a panel.
- (e) to have practical knowledge of a second language.

Licentiate and Doctor of Letters in Geography

Licentiate of Letters

Candidates must:

- (a) possess a bachelor's degree (baccalauréat).
- (b) to take seminar courses, practical work and successfully pass the 4 certificate examinations in general geography, regional geography, the geography of Canada and history.
- (c) to write a thesis under supervision.

Doctor of Letters

Candidates must:

- (a) be a Licentiate of letters (in geography).
- (b) possess practical knowledge of a second language.
- (c) write a thesis and defend it before a panel.

Courses given by the Department of Geography

G. 10-11 - Introduction to Physical Geography. Elementary study of the chief physical characteristics of general geography; formation, evolution of relief; hydrography and climate. - (3 credits)

- G. 50 - Introduction to Human Geography. Elementary study of the main human elements in general geography; the distribution of population on the face of the earth; rural and urban peoples; races. (2 credits)
- G. 60-61 - The Main Features of Canadian Geography. The natural regions of Canada. A study of the principal characteristics of each from the point of view of physical, economic and human factors. - (3 credits)
- G. 100-101 - Geography of the Principal States of the World. A broad study of the physical, economic and human factors, in the principal countries of the earth; U.S.A., U.S.S.R., Great Britain, France, etc. (6 credits.)
- G. 110-111 - Introduction to Geology. Fundamental principles of different rock structure. Origin of earth and the weathering factors. The great areas of geological history. (3 credits).
- G. 120 - Introduction to Geopolitics. An analysis of the laws of the evolution of states and their geographical functions. A synthesis of geography with politics, economics, diplomacy and strategy. An application of the principles of geopolitics to contemporary problems. (2 credits.)
- G. 125 - Economic Geography of Canada. A study of the economic progress of the country in terms of geographical factors. Type of industry, of internal trade. (2 credits).
- G. 130 - Cartographic Techniques. Techniques. Techniques of Cartographic representation of the terrestrial sphere; types of projections, their peculiarities, advantages, disadvantages etc. (1 credit).
- G. 135 - Climatology. Elementary principles of dynamic meteorology. The types of climate (2 credits).
- G. 140 - Eastern Canada. Detailed story of the Maritimes, Quebec and Ontario. Theory courses and work with large scale maps.
- G. 150-151 - Physiography. Study of the formation and evolution of terrestrial relief. The work of erosion and sedimentation. (2 credits)
- G. 155 - Glacial Morphology. The principle types of glaciology. The effect of glaciers on topography; work of erosion and sedimentation.
- G. 160 - Scandinavia. Study of physical economic and human factors in the Scandinavian peninsula.
- G. 165 - The Far East. General geography; climate, vegetation, culture. General geography of the Soviet Far East, China and Central Asia.
- G. 166 - The Far East II. A study of the regional geography of Korea, Japan and of Japanese Micronesia. Ethnography of the Far East. (2 credits)
- G. 170 - Practical Cartography. Mapping instruments. The technique of geographical sketching. The different stages of map making. The block diagram. (90 hours of practical work).

G. 175 - U.S.S.R. and Argentina. Physical, human and economic study of the U.S.S.R. and Argentina. (2 credits)

Courses for the Master's and Doctor's Degree

G. 200 - The Geography of Livestock. Importance, distribution, and methods of livestock raising in the world. (2 credits)

G. 205 - Industrial Geography. The geographical factors in industrial development. Distribution of industry in the world. Development and types of industrial production.

G. 210 - Seminar Course on Canada. Presentation of a personal field of study of Canadian Geography. General criticism and discussion. (2 credits).

G. 215 - Seminar on Methodology. Preparation of theses work and discussion of specific geographical problems. (2 credits)

G. 220 - Seminar on Specific Geographical problems in the Far East. Presentation of work under the direction of a professor. (2 credits)

G. 225 - Bio-geography and Ecology. Climatology, aerogeography, habitats, associations, biological complexes. (2 credits)

G. 230 - Marine and Lacustrine Hydrology. Study of the Characteristics of marine environment; fresh water.

G. 235 - Interpretation of Aerial photographs. The technique of aerial photography. Geographical data. Use of the stereoscope. (1 credit)

G. 240 - Geography of Northern Canada. Structure, relief, climate, vegetation, soil, people, environment, transportation and resources. (2 credits)

AM. 200 - Ethnology and Archeology - Introduction to general ethnology. (2 credits)

G. 250 - Topographic Surveying - The instruments of topographic work. Topographical surveys with a plane table.

MOBILE SCHOOL OF GEOGRAPHY¹ VACATION COURSES

- From July 11 to August 20, 1949

Summer School Courses

These courses are specially designed for people teaching in schools and colleges, but is also for those who wish to add to their general

¹ Attendance at the Mobile School of Geography by students in the Geography Course (regular term) is not compulsory.

culture by extending the range of their geographical knowledge. The course prepares students for the following grades, certificates and diplomas: Certificates in Geographical Studies (A.B. and C.), a diploma in geography, and a master of arts (geography). They are accepted as University credits, toward a licentiate or a doctorate in the Faculty of Letters.

The Program

The program of studies gives one hundred hours of theory lectures and conferences, all given during the morning, and three afternoons per week are given over to practical work and excursions.

Lectures Courses

1. Elements of Physical Geography
2. Biography
3. Physiography of the Appalachian Region
4. Regional Geography of Eastern Quebec and the Maritime Provinces.
5. Map Work on large scale maps of the visited regions.
6. Technique of work on the ground.
7. Local Geography.

(iv) UNIVERSITY OF TORONTO

A course of Honour Geography leading towards a Bachelor of Arts Degree is offered by the Department of Geography at the University of Toronto. A student who has obtained grade B standing without condition at the examination of the First Year of the Pass Course or Second Class Honours in Social and Philosophical studies may enter the Second Year of the Honour Geography course provided Geography as been selected as one of the subjects of the First Year. The curriculum constituting the course in Honour Geography is set down. Figures and letters designating the various courses are included, as are the number of lecture hours per week.

HONOUR GEOGRAPHY COURSE WITH COGNATE SUBJECTS

Second Year

One of French 2b	1 hour
Military Studies 2b	1 hour
Oriental Literature 2b (C)	1 hour
Religious Knowledge 2f or 2g (M)	1 hour
Two of Anthropology 1c	3 hours
Economic 1c or 2c	3 hours
Geological Sciences 11a, 11b	4 hours
Geological Sciences 21a, 21b, 25a	3 hours
History 1b or 2c	3 hours
Botany 26	3 hours
<u>Geography 1, 1c, 2, 3, 4</u>	12 hours

Third Year

One of Greek and Roman History 3b	1 hour
Military Studies 3b	1 hour
Oriental Literature 3b (C)	1 hour
Religious Knowledge 3g or 3h (M)	1 hour

A reading course in French or German .

Two of Anthropology 2b	2 hours
Astronomy 5	2 hours
/ Astronomy 6	2 hours
Economics 3f	3 hours
Geological Sciences 9a	2 hours
History 2b or 3b or 3c or 3d	2 cr 3 hours
Sociology 2b	3 hours
Zoology 28	2 hours
<u>Geography 7, 10, 14, 15, 16, 17</u>	14 hours

Fourth Year

One of Greek and Roman History 4b	1 hour
Military Studies 4a	1 hour
Oriental Literature 4b (c)	1 hour
Religious Knowledge 4g or 4h (M)	1 hour
A reading course in French or German	1 hour
One of Anthropology 4c or 4d	2 or 3 hours
Economics 4b or 3f	3 hours
Geological Sciences 10, 17a	3 hours
History 3c or 3d or 4b	3 hours
Sociology 3c or 4a	3 hours
Zoology 28	2 hours
<u>Geography 7, 10, 14, 15, 16, 17, 18</u>	18 hours

A description of the geography courses offered to candidates working towards a Bachelor of Arts Degree in the Pass and other Courses are listed below. A brief description of the nature and extent of each course, the required reading and the number of lecture hours per week, are included.

GEOGRAPHYPass Courses

1a. Systematic Physical Geography and World Regions. Physical structure; climatic control; economic ecology of seven continents and Canada; geographic basis of food-supply, population and trade. Text book: G. TAYLOR, Environment, Race and Migration. Reference: FINCH & TREWARTH, Elements of Geography. Lectures two hours and laboratory two hours a week.

The Laboratory work consists of simple surveys by means of plane table and compass, map reading and making of block diagrams, the elements of structure and topography with special reference to the Toronto region; weather charts and instruments, climatic regions, regional economic correlations. Text-book; G. TAYLOR, The Geographical Laboratory.

1d. Economic aspects of World Geography. Economic geography of Canada. Lectures, three hours a week. Text-books: G. TAYLOR, Canada, as advanced text; JONES AND DARKENWALD, Economic Geography. Reference: JAMES, Outline of Geography.

2a. Cultural Geography. Fundamentals of human distribution. Changing environments and their effect on the migrations of the five main races. General ecological problems of race, nation, language, and religion, with special reference to the development of European culture. Text-books: As in course 1a, also G. TAYLOR, Environment and Nation. Lectures two hours and laboratory two hours a week. (See handbook).

The laboratory work is similar to that done in First Year but of a more advanced type-map projections, geographical instruments, advanced map reading, correlations of races and nations.

2c. Military Geography. Major topographic units and their relation to routes and settlements, especially to the European and Mediterranean areas; origins of national groups in Europe; structure and strategy in the French war zone; distribution of coal, iron, oil, etc., in these areas. Text book: G. TAYLOR, Atlas of Topographic Control. One hour a week.

2d. Economic Geography of Canada and the United States. Text-books: G. TAYLOR, Canada, an Advanced Text: H.H. McCARTY, Geographic Basis of American Economic Life. Lectures 3 hours a week.

3a. Regional Geography of Canada and the United States. Text-books: G. TAYLOR, Canada, an advanced text: Lectures two hours and laboratory two hours a week.

The laboratory work consists of climatological problems, the study of topographic maps of the principal regions of North America; mapping of economic data; principles of latitude and longitude; preparation of scientific papers. (See handbook). Text-books: G. TAYLOR, Canada, an advanced text: H.H. McCARTY, Geographic Basis of American Economic Life; WHITE and FOSCUE, The Regional Geography of Anglo-America.

3. Regional Geography of Europe. Special attention will be given to culture, political and economic problems. Practice in the use of maps will be included. Three hours a week. References: SHACKLETON, Europe; HUBBARD. Geography of Europe; TAYLOR, Environment and Nation.

For these candidates, working toward a Bachelor of Arts Degree in the four year Honour Geography course, the following courses are required:

Honour Courses

1. Physical Geography. Study of land forms; the physiographic cycle; elementary climatology; major climatic regions of the world; correlation of climate, soils and vegetation; natural regions. Text-books: VON ENGELN, Geomorphology: TREWARTHA, Introduction to Weather and Climate: HAURWITZ and AUSTIN, Climatology. Lectures three hours a week.

1b. Systematic Physical Geography and World Regions as in course 1a. Four hours a week.

1c. Practical Work. Studies of typical areas of south-eastern Ontario in the field. Cartographic study of maps; study of physiographic cycle on selected topographic sheets; geographical interpretation of Canadian and European Maps. Laboratory 3 hours a week.

2. Cultural Geography. Fundamentals of human distribution; general ecological problems of race, nation, language and religion, with special reference to the development of European culture. Text-books: TAYLOR. Environment, Race and Migration; Environment and Nation. Lectures two hours a week.

2b. Cultural Geography as in course 2a. (Special laboratory work may be arranged for Modern History students who have not taken geography in the First Year.) Four hours a week.

3. Seminar for Second Year Honours. The Regional Geography of Latin America or Asia. Three hours a week.

4. Mathematical problems in geography; map projections; navigation. Part of this course will be devoted to the working of practical exercises. References JAMESON and ORMSBY, Mathematical Geography; DEETZ and ADAMS, Elements of Map Projections; STEERS, Study of Map Projections: Nautical Almanac; BAKER, Astronomy, RUGSELL, DUGAN, and STEWART, Astronomy; TUTTLE and SATTERLY, Theory of Measurements. Lectures and laboratory work, three hours a week.

5. North America. Regional geography in terms of structure, climate, history of settlement, resources and their exploitation, transportation and trade. References: MILLER and PARKINS, Geography of North America; ATWOOD, Physiographic Regions of North America; G. TAYLOR, Canada, WHITE and FOSCUE, The Regional Geography of Anglo-America. Four hours a week.

6. Latin America. Structure, land forms, climate, vegetation and soils; agricultural, mining and other industries; trade relationships; historical and social aspects of settlement and possible future development. Text-books, CARLSON, Geography of Latin America; JONES, South America: JAMES, Latin America. Four hours a week.

7. Europe. Regional studies of selected countries with special emphasis on the industrial and economic aspects. References: SHACKELTON, Europe; HUBBARD, Geography of Europe. Lectures and seminars, four hours a week.

8. Asia. Analysis of the physical environment: study of main human problems in their regional setting. Reference: STAMP, Asia. Lectures and seminars, four hours a week.

9. Africa. The structure, climate and vegetation; human geography native societies and European occupation; regional and economic studies; possibilities for future development. Reference; FITZGERALD, Africa. Lectures, four hours a week.

10. Australia. A study of the effect of warm environments on British settlement, considered regionally. Reference: TAYLOR, Australia; A study of Warm Environments (1940). Three hours a week for one term.

11. Polar Regions. Structure, exploration and possibilities of settlement and exploitation in Arctic and Antarctic lands and seas. References: TAYLOR, Antarctic Adventure and Research; NORDENSKJOLD and MECKING, Geography of Polar Regions, Three hours a week for one term.

12. Climatology. An advanced course dealing with typical regions in the various climatic zones. The development of the science; classification of climates, changes in climate, ice ages, etc. References: MILLER, Climatology, KENDREW, Climates of the Continents: TREWARTHA, Introduction to Weather and Climate. Three hours a week for one term.

13. Pedology. The fundamentals of soils science: morphology of the soil profile; development and significance of the great soil groups; classification and geographical distribution; soil and plant relationships: economic aspects; erosion and conservation. Practical work, including the study of profile monoliths, samples and soil maps. Text-books: LYON and BUCKMAN, The Nature and Properties of Soils: JOFFE, Pedology; KELLOGG, The Soils that Support us. Two hours a week.

14. Agricultural Geography. The origins, adaptations and distributions of the various crop plants and domestic animals. A systematic approach to the agricultural regions of the world and the principal types of land utilization. References: KLAGES, Ecological Crop Geography: JONES and DARKENWALD, Economic Geography HUNTINGTON, WILLIAMS and VAN VALKENBURG, Economic and Social Geography. Four hours a week.

15. Urban Geography. A study of the origin and growth of human communities from village to city, including discussions of the sites of towns; functional zones, improvement, and classification of towns. References: MUMFORD, Culture of Cities: LAVEDAN, Géographie des villes. Three hours a week for one term.

16. Seminars on selected topics. One hour a week.

17. Field Camp. A field camp will be held each fall before the opening of the University session for students in the Third and Fourth years. A report on work done during the camp must be presented by each student. Credit in the fourth year will be given for this course to those students who have engaged in approved field work during the summer.

18. Geographical Field Project. Students at the end of the third year will be given a field problem and will present their written reports before March 1st in their final year. Three hours a week.

19. Environment and Man. A survey course in Geography in which the factors of physical geography are discussed and correlated with the activities of man. Particular references will be made to Canadian conditions. Geographical techniques will be demonstrated three hours per week.

Regulations and Course Work Leading to an M.A. and Ph.D. Degree

Candidates for advanced degrees are accepted under the provisions of the general regulations. Students who have not attained the equivalent of an honour degree in Geography may be enrolled provisionally as graduate students until they have completed such work as the Staff shall prescribe.

Graduate work leading to the degree of Master of Arts is offered in the subjects enumerated below.

Candidates will be accepted for the degree of Doctor of Philosophy only after having satisfied the Department that they have an adequate knowledge of the subject and are possessed of the ability to do original research. A student may choose his major field of study from Physical Geography, Human Geography or Regional Geography. A minor may be chosen from among the courses in the Department which are not included in the student's major field. The Department is also prepared to offer minors to students from other departments.

Courses of Instruction

1. Characteristics of Polar Geography and Exploration. Dr. Taylor, 1948-49.
2. Political Geography - Dr. Tatham
3. History of Geographic Thought - Dr. Tatham
4. Regional Geography of Canada - Dr. Putnam
5. Land Utilization and Conservation - Dr. Putnam
of Natural Resources
6. Physical Geography - Dr. Putnam

(v) UNIVERSITY OF WESTERN ONTARIO

Instruction in Geography is given at the College of Arts and Science (University College). A description and the Courses in Geography are listed:

20. Elements of Geography; The earth as the home of man; the elements of the physical and cultural landscape with special reference to their world patterns. Two lectures and two hours practical work a week: three credits.

29. Geography of World Resources and industries: trade routes and centres: The world's physical resources: their nature, utilization, and transportation. Three lectures a week: three credits.

30. Advanced Physical and Cultural Geography: Problems in the study of the environmental factors and their interrelationships, with special reference to southwestern Ontario. Two lectures and two hours practical work a week; three credits. Prerequisite: Geography 20.

35. World Regional Geography. A systematic survey of the major natural and political regions of the world. Two lectures and two hours practical work a week; three credits. Prerequisite: Geography 20, 29 or equivalent.

40. Problems in Geography. A survey of historical geography, political geography, and the philosophical foundations of modern geographical thought. Three lectures a week; three credits. Prerequisite: any two of Geography 20, 29, 30, 35.

45. Geography of Canada: The natural Wealth of Canada and its Conservation. The geographic bases of human occupance in Canada. Conservation of natural resources. Three lectures a week; three credits. Prerequisite: Geography 20 or 29.

Honours Courses

Geography 229, 330, 335, 440 and 445 are identical with 29, 30, 35, 40 and 45 respectively. Students who elect honours courses will cover additional material and be held strictly to the University regulations of honours standards.

500. Seminar in Social Geography: Discussions and readings on selected problems. Topic for 1950-51: The teaching of Conservation in Schools, Colleges and Universities: Hours by appointment. Professor Pleva. Three credits. Prerequisites: Any three of Geography 20, 229, 330, 335, 440, and 445.

501. Seminar in Physical Geography: Discussions and investigations of selected problems. Topic for 1950-51: A detailed approach to the Geography of Southwestern Ontario. Mr. Packer. Hours by appointment. Three credits. Prerequisite: Geography 20, 330 and one other course in Geography.

550. Research in Geography. Field work and report techniques as applied to a geographic problem. A systematic report and thesis-writing. Summer employment on assigned problems will be arranged. Hours by appointment. Professor Pleva, and Mr. Packer, three credits. Prerequisites: Any five of Geography 20, 229, 330, 335, 440, 445, 500, and 501.

All students enter the Faculty of Arts and Sciences in one of a number of alternative courses. Students registering in Junior Group 1, 2, 3 or 4 do so with an eye to whichever of the Senior Group A or B they will enter later. The place of Geography in these Junior and Senior Groups and in other specific courses, is noted in this text. However, the reader must refer to the calendar 1950-51 for a full perspective.

<u>In Junior Group 2</u>	<u>In Senior Group A</u>	<u>In Senior Group B</u>
Geography 20	Geography 20, 29, 30, 35, 40, 45	Geography 20 (if not previously taken) 29, 30, 35, 40, 45.

Any student who has completed Junior Group 1, can carry on to Senior Group A of the General Course. Any student who has completed Junior ^{Group} 2, 3 or 4 can carry on to Senior Group B. The courses in Geography, which he may choose have been noted above.

Honours Geography Course with Cognate Subjects

Requirements for admission; Junior Group 1 or Junior Group 2 with at least 60% in each subject taken in the first year.

<u>Second Year</u>	<u>Credits</u> ¹
Geography 20 (Elements of Geography)	3
Geography 229 (Geography of World Resources and Industries)	3
Mathematics 31 (Descriptive Astronomy), 31b (Statistics)	2
At least 4 credits from the following options:	
Botany 23a (Plant Ecology)	2
Economics 228 (Introduction to Sociology)	3
Economics 257 (Economic History of Europe and North America)	2
Mathematics 24 (Calculus)	4
Zoology 22 (Animal Ecology)	3
History 14 (or 20 or 36)	3

And one of the following divisions: A following Junior Group 1, B following Jr. Group 2.²

<u>A</u>	<u>B</u>
Economics 20 (Introduction to Economic Principles) 3	Botany 10 (Introductory) . . 3
German 5 or Russian 1 3	Geology 10 (Introductory) . 3
(Beginning courses)	Philosophy 30 Introduction
Psychology 20 Introduction to	or one additional year's
General Psychology 3	work in a modern foreign
	language 3

Anyone who has taken Geography 20 in Junior Group 2, will repeat it with the additional assignments (for scholarship purposes) or will replace it by three additional credits of options from the list above.

¹ One credit represents the weight of a lecture course which meets one hour a week throughout the academic year or two hours a week in one term; one credit in a laboratory period represents two hours a week throughout the year, or four hours a week in one term.

² Junior Group 2 permits students to approach Geography from a Science or Arts background.

Third Year

For admission to the third year each Geography subject of the second year (20 and 229) must be at least 66% and the average of all subjects must be 60%.

Economics 332 (Political Science)	3
English 35 (General Literature and Composition)	3
Geography 330 (Geographical Application of Cartography and field projects)	3
Geology 256 (Drafting)	1½
Geography 335 (World Regional Geography)	3
History 31 (History of Canada)	2
Mathematics 359b (Astronomy and Navigation) 29a	2

At least three credits from the following options:

Economics 342 (Canadian Political, Social and Economic Problems, and Municipal Affairs)	3
Economics 348 (Population Trends and Problems)	3
Economics 354 (Agricultural Economics)	2
German 35 or Russian 10	2 or 3
History 36 (Modern History)	3
Philosophy 30 (Introduction to Philosophy) if not taken previously	3
Second year options not already elected	3

Note: Students intending to continue into graduate studies are advised to begin work in a second foreign language in the third year, if they have not done so earlier. Consult the Department of Geography for recommendations.

Fourth Year

For admission to the fourth year each Geography subject of the third year (330 and 335) must be at least 66% and the average of all subjects must be 60%.

Geography 440 (Problems in Geography)	3
Geography 445	3
History 44 (History of the United States)	3
Geology 356 (Surveying) Field Work	2
Geology 467 (Pleistocene Geology) Field Trip in S.W. Ont.	2
Economics 351 (International Relations: Economic and Political)	3
French 45 (Scientific) or German 45 (Scientific) or Russian 45 (Scientific)	1

At least three credits from the following options:

Economics 39	1½
Economics 462b (Public Administration)	1½
Economics 300 (Economic Theory) or English 45	3
Geology 263 (Paleontology and Stratigraphy)	3
Zoology 453 (Animal Ecology)	2
Philosophy 47 (Modern Philosophy)	2

Psychology 36 (Genetic Psychology) or	
49 (Social Psychology)	2
Second or Third year options not previously elected	3
English 38 or 49	3

Note: Students in Fourth year Honour Geography shall attend all graduate seminars in Geography (500 and 501) without credit.

2. JOINT DEPARTMENTS IN WHICH GEOGRAPHY IS A DIVISION

(1) THE UNIVERSITY OF BRITISH COLUMBIA, DEPARTMENT OF GEOLOGY AND GEOGRAPHY

Candidates may proceed to a Bachelor of Arts or a Master of Arts Degree in Geography in the Department of Geology and Geography in the Faculty of Arts and Science. The degree of B.A. is granted with Honours or as a General Course degree. A General Course degree will be granted on completion of Courses amounting to 60 units chosen in conformity with Calendar regulations: an Honours degree will similarly require 66 units¹.

Courses Leading to the Degree of B.A. General Course

Geography 101, 201, 202 are offered as options in the First and Second Years. Details of Courses available in the Third and Fourth years are given under the various departments.

Single Honours Course

Geography

Prerequisites: In the First and Second Years, Mathematics 101, Geography 101, and two years of Russian, French or German.

Course: Geography 201 is recommended in **the Second Year** for those in the Social Sciences. In the Third and Fourth Years, the Honours Course required fifteen units chosen from any Third and Fourth year Geography Courses, and also a graduating essay to count three units. Because of the breadth of field encompassed by Geography, some Courses in Agriculture, Anthropology, Economics, Geology, History, Sociology and Slavonic Studies are also recommended by the Department.

1

The number of units assigned to a Course is given in brackets immediately following the course number. The hours assigned for laboratory, lectures, and tutorials in a course are as follows:

- 2 lectures and 3 hours laboratory per week, both terms (2-3; 2-3)
- 1 lecture and 2 hours laboratory per week, First term (1-2; 0-0)
- 1 lecture and 2 hours laboratory per week, Second term (0-0; 1-2)
- 2 lectures, 3 hours laboratory and 2 hours tutorial or discussion per week, both terms (2-3-2; 2-3-2)
- 2 lectures, 3 hours laboratory and 2 hours tutorial or discussion per week either term (2-3-2).

Geography is offered here in combination with a number of other courses. The requirements and curricula in these other courses have equal weight in the combination.

Geology and Geography

Prerequisites: Chemistry 100 or 101, Geography 201 Mathematics 101, and a modern language.

Course: In the Second year, Geology 200 (Geography 101 passed with at least 75% accepted in lieu of Geology 200); in the Third and Fourth years, 12 units in each of Geology and Geography selected in consultation with the Head of the Department, and a graduating essay counting three units.

The Geography Courses available to candidates are listed:

Students intending to major in Geography are required to take Geography 101 as prerequisite to all other courses in Geography. Geography 101 is one of the elective sciences. Geology 305, Geology 412, and Slavonic Studies 205 are accepted as courses in Geography.

101. (3) Elementary Physical Geography. This introductory Course provides a foundation for the study of geography. It will be useful not only to those who may intend to continue a study of geography or to teach it in schools, but to all those who are interested in man's physical environment. This course covers the study of land forms, processes of weathering, erosion, diastrophism materials of the earth's crust, climate, and history of the earth. The Laboratory part of the course includes elementary surveying and map making, interpretation of topographic maps, the study of common minerals, rocks, and fossils. Text-book: Thompson, Fundamentals of Earth Science, 1947, Appelton-Century.

- Mr. MacKay (3-3; 3-2)

201. (3) Introductory Human and Economic Geography - A general introductory course dealing with man and his occupation. The course deals with the effect of physical environment upon the distribution of the world population. It discusses the distribution of various natural resources as a background to the understanding of national problems of trade and commerce and the interchange of products. Text-books: Bengston and Van Roye, Fundamentals of Economic Geography, 1950, or Case and Bergsmark, College Geography, 1949.

- Mr. Robinson, (3-0; 3-0).

202. (3) Weather and Climate. The course is meant to give an understanding of elementary study of weather phenomena.

It includes practical weather observations and recording, and analysis of daily weather maps. In the Second Term it deals chiefly with climatic classification and description, and the distribution of climatic types. Additional work will be required of Geography major and Honours student and those wishing Third or Fourth Year credit. Text-book: Trewartha, An Introduction to Weather and Climate, 2nd edition, 1943, McGraw-Hill.

(2-2; 2-2)

301. (3) Cartography and Map Reading. Historical cartography, map projections, methods of showing relief, aerial photographs, distribution maps, statistical graphs and cartograms, and sources of maps; practical field mapping and methods of land utilization survey. Text: Raisz, General Cartography, 1948.

- Mr. MacKay (2-2; 2-3)

303. (3) World Regional Geography - An outline course of regional geography of the world. The physical structure, resources, climate, population, transportation, and industry of the continents are studied. Emphasis on particular continents may change from year to year. Recommended for students taking only once course in geography.

- (3-0; 3-0)

306. (3) Natural Resources and World Affairs (Economic Geography). Geographic basis of food supply, energy, natural resources, transportation, and trade. This course is intended to give a background for those interested in international and national affairs. - Mr. Warren, Mr. Griffith, Mr. Rowles.

- (2-2; 3-0)

307. (3) Human and Political Geography. Influences of natural environment upon man; life and occupations of man in climatic regions such as the arctic, tropics, deserts, mountains; world population problems; boundary problems; development of geopolitics. Geography 201 should precede this course. Text: White and Renner, Human Geography 1948 or Percy and Fifield, World Political Geography.

Mr. Robinson (3-0; 3-0)

406. (3) Geography of Asia. Physical and Human Geography. Topography, climate and resources of Asia, and their relationship to population distribution and industrial development. Special emphasis will be given to the Soviet Union, India and Far East. Text-book; Cressey, Asia's Lands and Peoples, 1945. McGraw-Hill.

- Mr. MacKay (3-0; 3-0)

408. (3) Regional Geography of Europe. Physical and human geography of Europe; climatic characteristics; development of resources; population; natural regions: Text: Shackleton, Europe, A Regional Geography.

- Mr. Chapman (3-0; 3-0)

409. (3) Geography of North America. Regional geography of North America with particular emphasis on Canada, dealing with physiography, climate, natural resources, population, primary industries. Special reference is given to the development and future of Northern Canada. Text: Regional Geography of Canada, 1950.

Mr. Robinson (3-0; 3-0)

445. ($1\frac{1}{2}$) Honours Seminar. Discussion of the history, philosophy, scope and content of geography; the different fields of geography, and professional opportunity. Required for all Third and Fourth Year Honours students. May be attended by senior majors without credit.

- (2-0; 2-0)

449. (3) Honour Essay. Required for Fourth Year Honours students. Topic to be selected in consultation with the staff of the Department.

Primarily for Graduate Students

The following seminar courses are open to senior students with proper prerequisites and departmental permission.

501. ($1\frac{1}{2}$) Field Mapping and Cartographic Problems. Field methods with emphasis on population and land use mapping. The use of maps in research problems. Prerequisite is Geography 301.

Mr. MacKay - (0-0; 2-2)

502. ($1\frac{1}{2}$) Climatology. Advanced study in both theoretical and applied climatology. Prerequisite is Geography 202.

Mr. Chapman - (2 2; 0-0)

503. ($1\frac{1}{2}$) Problems in Canadian Geography. Research problems and discussion on certain geographic regions of Canada. Prerequisite is Geography 409.

Mr. Robinson - (0-0; 2-2)

Regulations and Course Work leading to the Degree of M.A.

1. The Master's Degree is offered:

- (a) by a single department, or,
- (b) by a combination of departments provided that the thesis covers work in both departments and is approved by both departments.

2. Candidates for the Master's Degree must hold a Bachelor's Degree with:

- (a) Honours in the field of the proposed Master's Course, or
- (b) at least second class standing in each of the undergraduate courses prescribed by the department or departments concerned as prerequisites to the Master's Course.

3. Candidates for the Master's Degree are required either to:

- (a) spend at least one regular winter session in resident graduate study or,
- (b) to do two or more years of work under University supervision, during which not more than six units of credit may be counted for reading courses.

4. At least eighteen units of courses numbered 300 or above, including a thesis counting from three to six units, will be required for the Master's Course. If the degree is to be taken in a single department, at least three and no more than six units must be taken in related fields outside the department, from Faculties of Arts and Science, Applied Science, and Agriculture.

THE DEGREE OF MASTER OF ARTS IN GEOGRAPHY

Prerequisites: Honours; or twelve units in advanced courses in Geography. M.A. Course: Thesis counting three units, and other courses to complete the requirements of the section above. All graduates must attend the Geography Honours Seminar.

(11) LAVAL UNIVERSITY (INSTITUTE OF HISTORY AND GEOGRAPHY)

The Institute of History and Geography is attached to the Faculty of Letters. The goal of the Institute is to teach history and geography, to train professors to teach these subjects, and to publish works on historical and geographical research.

Admission to the Faculty of Letters

To be admitted to the Faculty of Letters a student must have a diploma or certificate of bachelorship or diplomas judged as being the equivalent.

Certificates, Diplomas and Grades

1. Licentiate of Letters in Geography. The student must pass a written and oral examination in the following:

- (a) General Geography
- (b) Regional Geography
- (c) History of Canada
- (d) Modern History

Preparation for Licentiate of Letters requires at least two years of attendance at the University.

2. Master of Arts

The candidate for this degree takes the same courses of study as the Licentiate Candidate. He must be a B.A. from some recognized University. Preparation for the degree necessitates only one year of attendance at the University or two summer sessions and a Semester at the Faculty. Like the Licentiate Course, it rests on the four certificates.

- (a) General Geography
- (b) Regional Geography
- (c) History of Canada (including folklore and an hour of practical English per week)
- (d) Modern History

The candidate does not have to write a thesis. Only those candidates who wish to prepare a thesis for their Master of Arts or Doctorate need request admission to the school of Graduate Studies.

3. Certificate in Geography

M. Pierre Dagenais gives 22 lessons in geography.

MM. Jacques Rousseau et Jean Michéa also gives a series of courses in human geography. Candidates for certificates have to give, once a month at least, a historical dissertation, having to do with the subject matter of one certificate or another; the subjects are given out by the Professors.

Courses in Geography 1949 - 1950

1. General physical Geography (cycle of erosion, rocks, structure, glacial relief. - 30 hours
2. General Human and Economic Geography (distribution of human races, density, migrations, urban geography, agricultural geography, forestry) - 80 hours
3. Geography of South America - 25 hours
4. Geography of Canada - 15 hours
5. Geography of France - 15 hours
6. Geography of Northern Europe - 30 hours
7. Practical Work - 35 hours
8. Geographical excursions and seminars - 50 hours

Courses in Geography 1950 - 1951

1. General Physical Geography (relief, hydrography, climatology) - 35 hours
2. General Human and Economic Geography (race, transportation, main industry) - 60 hours
3. Geography of North America (general detailed study of Canada) - 30 hours
4. Geography of Western Europe - 35 hours
5. Geography of Africa - 35 hours
6. Practical work (map study) - 60 hours
7. Excursions and seminars - 60 hours
8. English course - 60 hours

APPENDIX I

QUESTIONNAIRE SENT TO CANADIAN UNIVERSITY PRESIDENTS

- (a) When were the first geography classes opened in your institution?
- (b) When was the Geography Department first established?
- (c) Was it the outcome of a Geographical Division in some other Department?
If so, of what Department? i.e. Economics
Geology
- (d) What led to the introduction of Geography at the University?
Was it the initiative of the President?
Was it the suggestion of a Faculty member, and if so, what was his subject?
Was it the instigation of an outside agency, and if so, of what agency?
- (e) Was any financial assistance obtained from any specific source?
Was this source a Provincial grant?
Was this source a Corporation grant?
Was this source an Educational Foundation grant?
Was this source a Private grant?
- (f) Was the first instructor in geography appointed to your staff a professional geographer?
If not, what was he? An economist?
An historian?
A geologist?
- (g) Was the first geographer appointed to your staff obtained
(a) by advertisement of the vacancy?
(b) by personal invitation of the President?
(c) by invitation at the suggestion of an outside agency, and if so, of what agency?

APPENDIX II

AN ANALYSIS OF GEOGRAPHY TRAINING AT SIX CANADIAN UNIVERSITIES

- | | |
|------------------------------|--|
| (i) McGill University | (iv) University of Toronto |
| (ii) McMaster University | (v) University of Western Ontario |
| (iii) University of Montreal | (vi) The University of British Columbia. |

1. All information on this chart is taken from two sources, (a) the 1950-51 Calendars and (b) questionnaires returned by University Presidents.
(see Appendix 1).
2. Due to the different methods of indicating hours of geography instruction in the different University Calendars, the computing of instruction time is often difficult. Lack of detailed knowledge may have led the author to make faulty interpretations of the Calendar, where Calendars are not self-explanatory.

Footnotes referred to on the chart.

3. The number of hours of geography instruction is reckoned by computing the number of lecture-weeks at respective universities and multiplying by the number of hours of instruction per week. Where instructions for half term courses are not designated as being given in the first or second terms then the first term is assumed.
4. Candidates for different degrees in Geography do not necessarily take all the courses as they are listed in the Calendar and subsequently do not necessarily qualify for all the hours of instruction indicated on the chart.
5. For McMaster University, hours of instruction were computed on the basis of half-terms for all courses, the terms being of unequal length.
6. This figure is taken directly from the Calendar.

	Honour Degrees in Geography	Number of Geography Courses available to B.A. Level. (a) half term. (b) full term	Total number of Lecture-weeks, and the number of Lecture-weeks in each of the first and second terms. 3	Number of hours of Geography Instruction (including laboratories, practical work, lectures and Seminars).	Total number of hours of geography instruction to B.A. Level ⁴ .	Number of hours of laboratory instruction and practical work, B.A. Level.	Total number of hours of laboratory instruction and practical work to B.A. Level.
(i)	B.A. B.Sc. M.A. M.Sc. M.Sc. in Meteorology Ph.D.	(a) 2 (b) 12	Total = 24 1st Term = 11 2nd Term = 13	(a) $6 \times 11 = 66$ (b) $32 \times 24 = 768$	834	(b) $1 \times 24 = 24$	24
(ii)	B.A. M.A.	(a) 9 (b) 7	Total = 23 1st Term = 11 2nd Term = 12	(a) 451^5 (a) 300	751	(a) 165^5 (a) 120	285
(iii)	M.A. Ph.D. LesL. DesL.	(a) 11 (b) 6	Total = 27 1st Term = 13 2nd Term = 14	(a) $16 \times 13 = 208$ (a) $11 \times 14 = 154$ (b) $12 \times 27 = 324$	686	120^6	120
(iv)	B.A. M.A. Ph.D.	(a) 4 (b) 18	Total = 27 1st Term = 12 2nd Term = 15	(a) $12 \times 12 = 144$ (b) $52 \times 27 = 1404$	1548	(b) $8 \times 27 = 216$	216
(v)	B.A. M.A. M.Sc.	(a) 1 (b) 8	Total = 26 1st Term = 12 2nd Term = 14	(a) $2 \times 14 = 28$ (b) $28 \times 26 = 728$	756	(b) $2 \times 26 = 52$ (b) $6 \times 26 = 156$	208
(vi)	B.A. M.A.	(a) 10 (b) 11	Total = 25 1st Term = 11 2nd Term = 14	(a) $7 \times 11 = 77$ (b) $32 \times 25 = 800$	877	(a) $2 \times 11 = 22$ (b) $7 \times 25 = 175$	197

Prerequisite for M.A./M.Sc./LesL.	3. Number of Geography Courses to M.A./M.Sc./LesL. Level	Number of hours of Geography instruction to M.A./M.Sc./LesL. Level.	Total number of hours of Geography ⁴ instruction to B.A. and M.A./M.Sc./LesL. Level.
(1) B.A. / 4 full courses in geography (or equivalent or (2) B.A. / preliminary qualifying program, or (3) for M.Sc. Candidates, a B.A. / 3 full Courses in geography (or equivalent) / Geology 1 or 2 / cognates	2 of 3 graduate courses	(b) 2x24 48	882
Honour B.A. including 16 full courses in geography	3 of 6 graduate courses	(b) 3x69 207	958
B.A. with a background in geography deemed appropriate.	3 half courses and 8 full courses are listed as graduate courses. Number of courses to be taken is not specified.	(a) 2x13 = 26 (a) 3x14 = 42 (b) 9x27 = 243 Total 311	1005
Honour B.A. including 24 full courses in geography.	2 of 6 graduate courses (no lecture hours listed in 1950-51)	(in 1949 - 50) (b) 2x27 = 54	1602
B.A. / 6½ full courses in geography	3 of 3 graduate courses	(b) 9x26 = 234	990
Honour B.A. / 12 units in Advance ⁵ geography.	3 graduate courses	(a) 8x14 = 112 (a) 4x11 = 44 Total 156	1033

